Audit Committee

Friday, December 21, 2018 at 8:00 a.m.

5th Floor Board Room, Water Board Building
735 Randolph Street, Detroit, Michigan 48226
GLWater.org

AGENDA

Note: Binders 1, 2 and 3 are combined in agenda order and document was renumbered.

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
    A. November 16, 2018 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
    A. Presentation of FY 2018 Year-end Audited Financial Report (Page 7)
    B. Update: FY 2017 and FY 2018 Shared Services True-up (Page 188)
    C. Status Update: 2018 Contract Alignment Process and Wholesale Water Contract Reopeners Status (Page 198)
7. NEW BUSINESS
    A. Discussion Draft: FY 2020-2021 Biennial Budget and (Page 202) Five-Year Plan
8. REPORTS
    A. Monthly Financial Report for September 2018 (Page 377)
    B. Quarterly Construction Work-in-Progress Report (Page 438)
    C. Status Report: FY2019 Continuous Improvement Report (Page 496)
    D. Detroit Water & Sewerage Department Financial Statements (Page 500)
    E. CFO Update Topics (verbal)
        i. Legacy Pension
        ii. Charges Rollout #3 (Revenue Requirement)
            – January 10, 2019 at 10:30 a.m. in Canton
        iii. Charges Rollout #4 – (Service Charges)
            - January 24, 2019 at 10:30 a.m. in Warren
9. LOOK AHEAD
   Next Audit Committee Meetings
    A. January 4, 2018 at 8 am (Special Meeting – Budget Review)
    B. January 18, 2018 at 8 am (Regular Meeting – Charges Review)
10. INFORMATION
11. OTHER MATTERS
12. ADJOURNMENT

Great Lakes Water Authority

735 Randolph Street
Detroit, Michigan 48226
glwater.legistar.com

Meeting Minutes - Draft

Audit Committee

Friday, November 16, 2018 | **8:00 AM** | **Water Board Building 5th Floor**

1. Call To Order

Chairman Baker called the meeeting to order at 8:05 a.m.

2. Quorum Call

Present: 3 - Chairman Brian Baker, Director Gary Brown, and Director Robert Daddow

3. Approval of Agenda

Chairman Baker requested a Motion to approve the Agenda.

Motion By: Robert Daddow
Support By: Gary Brown
Action: Approved
The motion carried by a unanimous vote.

4. Approval of Minutes

A. 2018-1003 Meeting Minutes of October 26, 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: October 26, 2018 Audit Committee Meeting Minutes.pdf

Chairman Baker requested a Motion to approve the October 26, 2018 Audit Committee Meeting Minutes.

Motion By: Gary Brown
Support By: Robert Daddow
Action: Approved
The motion carried by a unanimous vote.

5. Public Comment

Raphael Chirolla (Oakland County Water Resources Commissioner's Office) stated he would like to address the Audit Committee under Item 6F (Oakland-Macomb Interceptor Drainage District Update).

6. Old Business

A. 2018-1004 FY 2018 Year-end Audit Progress Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: FY 2018 Year-end Audit Progress Report 11.16.2018.pdf
Audit Planning Schedule for Audit Committee Meeting 11.16.2018.pdf

Motion By: Gary Brown
Support By: Robert Daddow
Action: Received and Filed
The motion carried by a unanimous vote.

B. 2018-1005 Investment Strategy and Related Proposed Contract Extension with PFM Asset Management LLC (GLWA Contract No. GLWA CS-022)

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: GLWA Investment Strategy and PFM Contract Extension November 2018.pdf
Great Lakes Water Authority Investment Strategy PFM.pdf

Motion By: Gary Brown
Support By: Robert Daddow
Action: Recommended for Approval to the Board of Directors Agenda of November 28, 2018
The motion carried by a unanimous vote.

C. 2018-1006 FY 2030 Financial Forecast Update

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: FY 2030 Financial Forecast 11.16.2018.pdf
Exec Sum Forecast 111218 Four Pages need 11x17.pdf

Motion By: Gary Brown
Support By: Robert Daddow
Action: Received and Filed
The motion carried by a unanimous vote.

D. 2018-1007 Capital Improvement Plan Relative to Financial Plan (Continued)

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Capital Plan Relative to Financial Plan 11.16.2018.pdf
Spend Rate Assumption Policy Draft 11.16.2018.pdf
CIP Policy Presentation from 10.2018 Audit Committee Meeting.pdf

Director Daddow made a Motion, Supported by Director Brown, to recommend approval to the Board of Directors subject to amending the language in the first sentence in the Purpose of the Proposed Capital Spend Rate Assumption Policy from "what is realistically available to spend for budgetary purposes" to "what can realistically be spent due to limitations beyond GLWA's control."

Motion By: Robert Daddow
Support By: Gary Brown
Action: Recommended for Approval to the Board of Directors as Amended Agenda of November 28, 2018
The motion carried by a unanimous vote.

E. 2018-1008 Reconciliation Committee Update

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Reconciliation Committee 11.16.2018.pdf

Motion By: Robert Daddow
Support By: Gary Brown
Action: Received and Filed
The motion carried by a unanimous vote.

F. 2018-1009 Oakland-Macomb Interceptor Drainage District Update

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Oakland-Macomb Interceptor Drainage District Update_11.16.2018.pdf
OMID Inquiries.pdf

Raphael Chirolla, Oakland County Water Resources Commissioner's Office, representing the Oakland-Macomb Interceptor Drainage District (OMIDD), addressed the Audit Committee regarding outstanding issues relating to current charges to the OMIDD.

Director Daddow made a Motion to Receive and File the Oakland-Macomb Interceptor Drainage District Update, with the understanding that the outstanding issues will be addressed in upcoming meetings (with OMIDD).

Motion By: Robert Daddow
Support By: Gary Brown
Action: Received and Filed
The motion carried by a unanimous vote.

7. New Business

A. 2018-1010 Inaugural Ratings for Junior Lien Debt

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Inaugural Ratings for Junior Lien Debt_11.16.2018 JW.pdf
Great Lakes Water Auth_Series 2018_3rd Lien wtr_swr_11-13-2018.pdf

Motion By: Robert Daddow
Support By: Gary Brown
Action: Received and Filed
The motion carried by a unanimous vote.

8. Reports

A. 2018-1011 Quarterly Investment Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: GLWA Audit Quartely September 2018 Investment Report 11.16.2018.pdf
GLWA_Quarterly_Investment_Report_September 2018 11.16.2018.pdf

Motion By: Gary Brown
Support By: Robert Daddow
Action: Received and Filed
The motion carried by a unanimous vote.

B. 2018-1014 Monthly Financial Report for August 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Monthly Financial Report Binder for August 2018.pdf

Motion By: Robert Daddow
Support By: Gary Brown
Action: Received and Filed
The motion carried by a unanimous vote.

Note: Director Daddow was excused from the remainder of the meeting at 10:27 a.m.

C. CFO Update Topics (verbal)

Nicolette Bateson, Chief Financial Officer/Treasurer, gave an update regarding Legacy Pension.

9. Look Ahead

The next Audit Committee Meeting is scheduled for Friday, December 21, 2018 at 8:00 a.m .

10. Information

None

A. 2018-1012 Calendar Year 2019 Audit Committee Meeting Dates

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Audit Committee 2019 Meeting Schedule Notice as of 10.26.18.pdf

No Action Taken - Informational Only

B. 2018-1013 FY 2020 Charges Rollout Meeting Schedule

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: Annual Charges Rollout 2020_Invite.pdf

No Action Taken - Informational Only

11. Other Matters

None

12. Adjournment

Chairman Baker requested a Motion to adjourn.

Motion By: Gary Brown
Support By: Brian Baker
Action: Approved
The motion carried by a unanimous vote.

There being no further business, the meeting was adjourned at 10:30 a.m.

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Nicolette N. Bateson, CPA, Chief Financial Officer/Treasurer

Re: Presentation of FY 2018 Year-end Audited Financial Report

Background: The FY 2018 audited financial statements were issued on December 14, 2018 after review by the Great Lakes Water Authority (GLWA) Board on December 12, 2018. The auditors for the GLWA will attend the December 21, 2018 Audit Committee meeting for a review of those reports.

Analysis: Attached are the following audit-related reports.

- FY 2018 Comprehensive Annual Financial Report (CAFR)
- FY 2018 Single Audit Compliance Report
- FY 2018 Independent Auditors' Communication with those Charged with Governance

Also attached is a memo requested by an Audit Committee member related to the reconciliation of the "Cash Held for the benefit of" account between the Detroit Water & Sewerage Department (DWSD) and GLWA.

Similar to prior years, a "Key Takeaways" one-pager is being prepared for distribution to stakeholders (will be presented at the Audit Committee meeting).

Proposed Action: Receive and file the final FY 2018 reports: FY 2018 Comprehensive Annual Financial Report, FY 2018 Single Audit Compliance Report, and FY 2018 Independent Auditors' Communication with those Charged with Governance. Further, staff is directed to provide copies to each Incorporating Municipality as outlined in the Articles of Incorporation.

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Kim Garland, Reporting and Compliance Manager

Re: Cash Held for the Benefit of DWSD – Final Audit Status Update

Background: GLWA finance staff works very closely with DWSD finance staff throughout the year to coordinate balances that are closely related between the two entities. This includes the cash that GLWA holds as Trustee for DWSD (referred to by GLWA as Cash Held for the benefit of DWSD). GLWA staff also report directly to the Audit Committee and Board of Directors on these balances monthly and most recently at the final draft statement discussions last week.

Analysis: The GLWA staff reported last week during final draft statement discussions with the Board that the Cash Held for the benefit of DWSD was in balance with DWSD records without variance. Upon release of the final statements this week and review of the final trial balance provided by DWSD, the GLWA staff has identified a small variance in the final statements between the ***Water*** Fund Cash Held for the benefit (fbo) of DWSD balance on the GLWA final financial statements and the DWSD final financial statements. The amount of the variance is $6,138, which represents 0.07% of the overall balance of $8.4 million. The DWSD balance is reported slightly higher than the GLWA balance by this amount as shown below. (It should be noted that there is no variance in the comparable category for ***Sewer*** Fund.)

GLWA Water Cash Held fbo Balance	DWSD Water Cash Held fbo Balance	Difference
$8,440,807	$8,446,945	$6,138

GLWA staff believes this amount to be related to the recording of the Wayne County tax lien settlement entries but will be reviewing this further with the DWSD staff to reconcile.

Proposed Action: Receive and file report.



Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2018

Striving to be the preferred provider of water and wastewater services in southeast Michigan.

GLWA

Great Lakes Water Authority

Prepared by Great Lakes Water Authority Financial Services

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GREAT LAKES WATER AUTHORITY

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GREAT LAKES WATER AUTHORITY

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CHIEF EXECUTIVE OFFICER'S TRANSMITTAL LETTER

December 14, 2018

Board of Directors
Great Lakes Water Authority

Dear Members of the Board,

I am pleased to present the Comprehensive Annual Financial Report (CAFR) for the Great Lakes Water Authority (GLWA) for the fiscal year which ended June 30, 2018. This is significant for GLWA as it provides the second full 12 month fiscal year of operations since GLWA's operational effective date of January 1, 2016. Having two full years of financial information allows the GLWA team to demonstrate delivery of the high level of performance that we have pledged.

GLWA's financial statements were prepared in accordance with U.S. generally accepted accounting principles ("GAAP"), as promulgated by the Governmental Accounting Standards Board ("GASB") and audited by a firm of independent certified public accountants engaged by the GLWA Board of Directors. This is consistent with the GLWA Articles of Incorporation and By-laws which require an annual audit of GLWA's financial statements by independent certified public accountants.

Responsibility for the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with GLWA management. To the best of my knowledge and belief, the information contained in this report is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of GLWA. All disclosures necessary for the reader to gain an understanding of GLWA's financial activity have been included.

GLWA management is responsible for establishing and maintaining an internal control structure designed to ensure that its assets are adequately safeguarded against loss, theft, or misuse and to maintain accurate and reliable financial records for the preparation of financial statements and the representations made by management. The internal control structure is designed to provide reasonable, but not absolute, assurance that these objectives are met. The concept of reasonable assurance recognizes that: 1) the cost of internal controls should not exceed the benefits derived from the controls; and 2) the evaluation of costs and benefits requires management's exercise of judgment. To the best of my knowledge and belief, GLWA's internal accounting controls adequately safeguard its assets and provide reasonable assurance of the proper recording of financial transactions in accordance with GAAP.

Rehmann Robson, LLC, Certified Public Accountants, has been retained by GLWA to serve as its independent auditors and has issued an unmodified ("clean") opinion on GLWA's financial statements for the year ended June 30, 2018 with comparative amounts for June 30, 2017.

GAAP requires that management provide a narrative introduction, overview and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis ("MD&A"). This letter of transmittal is designed to supplement the MD&A and should be read in conjunction with it. GLWA's MD&A is located immediately following the independent auditors' report.

A Model of Regional Collaboration

GLWA is the result of a monumental collaboration among regional leaders. Working to meet the needs of sustainable and affordable infrastructure, a memorandum of understanding was agreed upon on September 9, 2014. Subsequently, GLWA was incorporated by the City of Detroit (City) and the counties of Macomb, Oakland and Wayne on November 26, 2014 pursuant to Act 233, Public Acts of Michigan, 1955, as amended. At the time of GLWA's incorporation, the City, through its Detroit Water and Sewerage Department (DWSD), was providing water supply services within and outside of the City through a water supply system and drainage and sewage disposal services within and outside of the City through a sewage disposal system.

On June 12, 2015, the City and GLWA executed the Regional Water Supply and Sewerage Disposal System Leases (the Leases), transferring the regional water and sewer facilities from the City to GLWA for an initial term of 40 years, as well as a Water and Sewer Services Agreement, pursuant to which GLWA provides water and sewer services to the City; the City then supplies these services to Detroit retail customers.

The above agreements required the satisfaction of several conditions before becoming effective. By January 1, 2016 (the Effective Date), those conditions were met and GLWA, under the terms of the Leases, became responsible for the assets, all bonded indebtedness, and operations for the regional water and wastewater systems.

GLWA leases the regional water and sewer facilities from the City for an allocation of $50 million per year to fund capital improvements for the City's retail system and/or debt obligations. GLWA also funds a Water Residential Assistance Program (WRAP) to assist low-income residential households in enrolled member partner communities.

The service area covered by GLWA is large and diverse. See the water system and sewer system maps on the following pages.

Water System

Our regional water system is one of the largest in the United States, both in terms of water produced and population served. The system currently serves an area of 1,760 square miles located in eight southeast Michigan counties with an estimated population of nearly 3.8 million or approximately 38 percent of Michigan's population. This encompasses 87 wholesale services contracts spanning 127 communities.

The water supply system consists of three intake facilities, five water treatment plants, 19 booster pumping stations, 32 water storage reservoirs and a conveyance system with over 803 miles of transmission mains.

The long-term strategy for the water system is a focus on flexibility. The Water System Master Plan was updated in August 2016. The master plan addressed declining water usage trends which has been a significant and consistent decline. Because GLWA's water system is large and made up of multiple facilities, the team had flexibility in charting a course forward. The overarching strategy is to address excess system capacity by derating a facility to reduce operating costs, but more significantly, avoiding future capital costs. Presently, the engineering team is evaluating an option to convert the Northeast Water Treatment Plant into a storage and pumping facility and invest in new transmission mains to support Northeast's service area.

Wastewater System

Our regional wastewater system is also one of the largest in the United States, both in terms of treatment capacity and population served. The wastewater system currently serves an area of 988 square miles located in three southeast Michigan counties, with an estimated population of nearly 2.8 million or approximately 28 percent of Michigan's population. This encompasses 18 wholesale services contracts spanning 76 communities.

The wastewater system consists of one of the largest single-site wastewater treatment plants in the world, three major interceptors, five pump stations, eight Combined Sewer Overflow (CSO) Control Facilities, including five retention treatment basins and three flow-through type facilities, and a conveyance system with 181 miles of trunk sewers and interceptors.

The long-term strategy for the sewer system is a focus on regional efficiencies. The Wastewater Master Planning Process, launched in April 2017 and supported by a Wastewater Master Plan Steering Committee including the Michigan Department of Environmental Quality, holds monthly meetings with stakeholders. The 40-year master planning process is focusing on water quality, leveraging the entire region's existing infrastructure, maximize the use of dynamic wet weather operations, strategic use of green infrastructure, addressing changes in weather patterns and rain event intensities, extensive system modeling including surface water and wastewater treatment, evaluation of resource recovery options and energy reduction opportunities.

Financial Highlights

The publication of this report is on the heels of the return of a "AA" category bond rating for the debt held by GLWA (which was assumed from DWSD on January 1, 2016). In preparing for a bond transaction, on September 5, 2018, Standard & Poor's (S&P) increased GLWA's senior lien water system rating by three notches to AA- and its second lien water system rating by three notches to A+. The rating agency also increased GLWA's senior lien sewer system rating by two notches to A+ and its second lien sewer system was increased by two notches to A.

This rating increase was followed by a successful refunding, on October 3, 2018, of $155,595,000 of Water Supply System Revenue Bonds and $257,465,000 of Sewage Disposal System Revenue Bonds ($81,595,000 in new money and $175,870,000 in refunding bonds). The net present value savings from the refunding transactions was a total of $59.42 million, with $24.90 million for the water fund and $34.52 million for the sewage disposal fund.

This demonstration of an improved credit rating to secure a lower cost of capital was a key objective in the creation of GLWA.

FY 2018 Results

GLWA is committed to ensuring the long-term sustainability of the water and sewer systems. Below are key financial highlights:

1. **Liquidity** - Strong liquidity with 1,066 days cash on hand for the water system and 432 days for the sewer system as shown on the Schedule of Days Cash in the supplementary information.

2. **Debt Service Coverage** - Excellent debt service coverage for both the water and sewer funds. The water fund reports debt coverage for senior lien bonds at 2.03 times and all bonds at 1.51 times. The sewer fund reports debt coverage for senior lien bonds at 2.11 times and all bonds at 1.29 times. Detail for all debt types can be found in the Debt Service Coverage schedule in the statistical section.

3. **Revenue Stability** – Predictable wholesale budgeted versus actual revenues with a positive variance of approximately $13.1 million, or 4.2 percent, for the water system and $2.0 million, or 0.7 percent, for the sewer system in the Schedule of Revenue Requirements in the Supplementary Information section.

4. **Controlled Spending** - Sound performance results with an overall Operations and Maintenance (O&M) budget positive variance of $6.6 million, or 5.75 percent, for the water system and $14.0 million, or 7.35 percent, for the sewer system as shown on the Schedule of Operations and Maintenance Expense for each system in the Supplementary Information section. The positive budget variances support subsequent year pay-as-you go capital investment.

Solid Foundation for Sustainability

As GLWA matures as an organization, the connections that our team members have with each other, and with our many stakeholders, is evident. This is most noticeable when you see the passion of multi-disciplinary teams, working through the development of a long-term plan that encompasses engineering, operations, finance, and many others to chart the course for the future – while never forgetting about the end-consumer and the environment. Below are topics that we cover when talking about GLWA. At the core of each item is a connection between our stakeholders and a foundational element of sustainability.

Revenues - The water and sewer system charge structure, developed collaboratively with member partners, supports a high degree of financial stability. The Water System revenues are billed on a basis of 60 percent fixed monthly charge and 40 percent commodity consumption using a 36-months historical average usage. The sewer system charge revenues are 100 percent fixed monthly billing based on each member partner's share of the annual forecasted revenue requirement.

Bondholder Protections - All GLWA and DWSD customer payments deposited to Bond Trustee Account and are disbursed in accordance the Master Bond Ordinance (MBO) flow of funds.

Defined Contribution Benefit Plans - All employee benefit plans are defined contribution which provider shorter term vesting and flexibility for the employee while creating zero risk on unfunded liabilities for GLWA.

Moderate Budget and Charges Requests - GLWA balances steady and controlled O&M budget requests for the short-term, while continuing to focus on increasing cash reserves for capital investment and decreasing long-term liabilities. This provides stability in the cost of supply for our member partners.

Flexible Capital Program - The majority of the GLWA FY 2019 – FY 2023 five-year capital improvement plan (CIP) is driven by optimizing the system and fostering innovation rather than driven by specific regulatory mandates. Almost no projects in the water system CIP are driven by mandates while less than 6 percent of the five-year sewer system CIP is driven by mandated permit requirements. The water system CIP calls for $712.8 million of major capital expenditures over the next five fiscal years (2019-2023) and the sewer system CIP calls for $633.2 million of capital expenditures over the same time period. The staff from Michigan Department of Environmental Quality (MDEQ) regularly engage with GLWA on capital project matters.

Customer Assistance Program - The WRAP (Water Residential Assistance Program) provided $4.5 million of resources to support customer assistance needs in the region for the year ended June 30, 2018. Services include payment assistance, consumption audit, basic plumbing repairs, conservation education, and limited lead fixture replacement. This means that qualified households, can receive payment assistance as well take steps to sustainably reduce their bills in the future.

Strong Economy - The regional system is supported by a broad-based economy that is experiencing the lowest rate of unemployment in over a decade at 3.7 percent. Other statistical information is shown in Schedule 10.

Service to the City of Flint - On December 1, 2017, GLWA entered into a 30-year master contract with the City of Flint (which is located in Genesee County). As part of this arrangement, the Genesee County Drain Commission (GCDC) and GLWA have a contractual arrangement for as needed reciprocal emergency water service. This provides redundant, backup service for customers in that area with very little capital investment. In addition, GLWA provides Flint with a credit on its monthly water bill equal to its debt service payment obligations on existing Karegnondi Water Authority bonds in exchange for a license to raw water rights.

Workforce Development - As a significant number of employees in the water service sector prepare for retirement, GLWA is focused on workforce development and succession planning. The inaugural Apprenticeship Program for Electrical Instrumentation Control Technicians (EICT-I) is currently in the second year of its three-year duration, training 20 apprentices to receive their EICT-I certification. This program, which operates in conjunction with the Department of Labor, will soon be expanding to include a new apprenticeship for maintenance technicians.

Vendor Outreach - Expanding the base of our vendor community is a top priority for GLWA. One way to do this is to foster relationships with small businesses to expand their water service sector experience. By doing so, GLWA lessens risk from reliance on a shorter list of firms that support our operations.

Governance Structure that Supports Collaboration - GLWA's Board of Directors consists of six members. Two members are appointed by the Mayor of the city of Detroit, the chief executive of each of the three counties (Macomb, Oakland, and Wayne), as well as the governor of the state of Michigan all appoint one member each to the Board. The Governor's appointee represents other suburban customer areas outside the tri-county service area, and that appointee must reside within that geographic area.

One Water Partnership - In September 2017, the first One Water Partnership Agreement was signed by GLWA and its member partners. This historic agreement outlines the mutual commitments to working together for the greater good of the region, and details the responsibilities of all parties to moving the agreement forward. A critical addition to the agreement is the development of a multi-jurisdictional, multi-agency approach to infrastructure renewal and investment.

Recognition Among Our Peers

AMWA Gold Award - GLWA received acknowledgement of its Effective Utility Management (EUM) efforts in November 2017 when the Association of Metropolitan Water Agencies (AMWA) honored the Authority with its annual Gold Award for Exceptional Utility Performance. AMWA is an organization of the largest publicly owned drinking water systems in the United States and is the only policy-making organization solely for metropolitan drinking water suppliers. The Gold Award recognizes drinking water systems that exhibit high levels of performance in the 10 EUM attributes. It was a tremendous accomplishment to be one of only three recipients in the country, made even more special in that it was our first submission and just our second year of operations.

APWA Project of the Year - GLWA received the 2017 Project of the Year from the American Public Works Association (APWA) Downriver Chapter for its Wick Road reconstruction, 48-inch water transmission main installation and resurfacing of Vining Road with the city of Romulus. This project is an example of collaboration and project coordination between GLWA and its member partner, Romulus. The result was a successful completion of more than one-half mile of road construction, a quarter mile of road resurfacing and nearly 4,000 linear feet of large diameter water transmission main installation in a single coordinated effort.

Acknowledgements

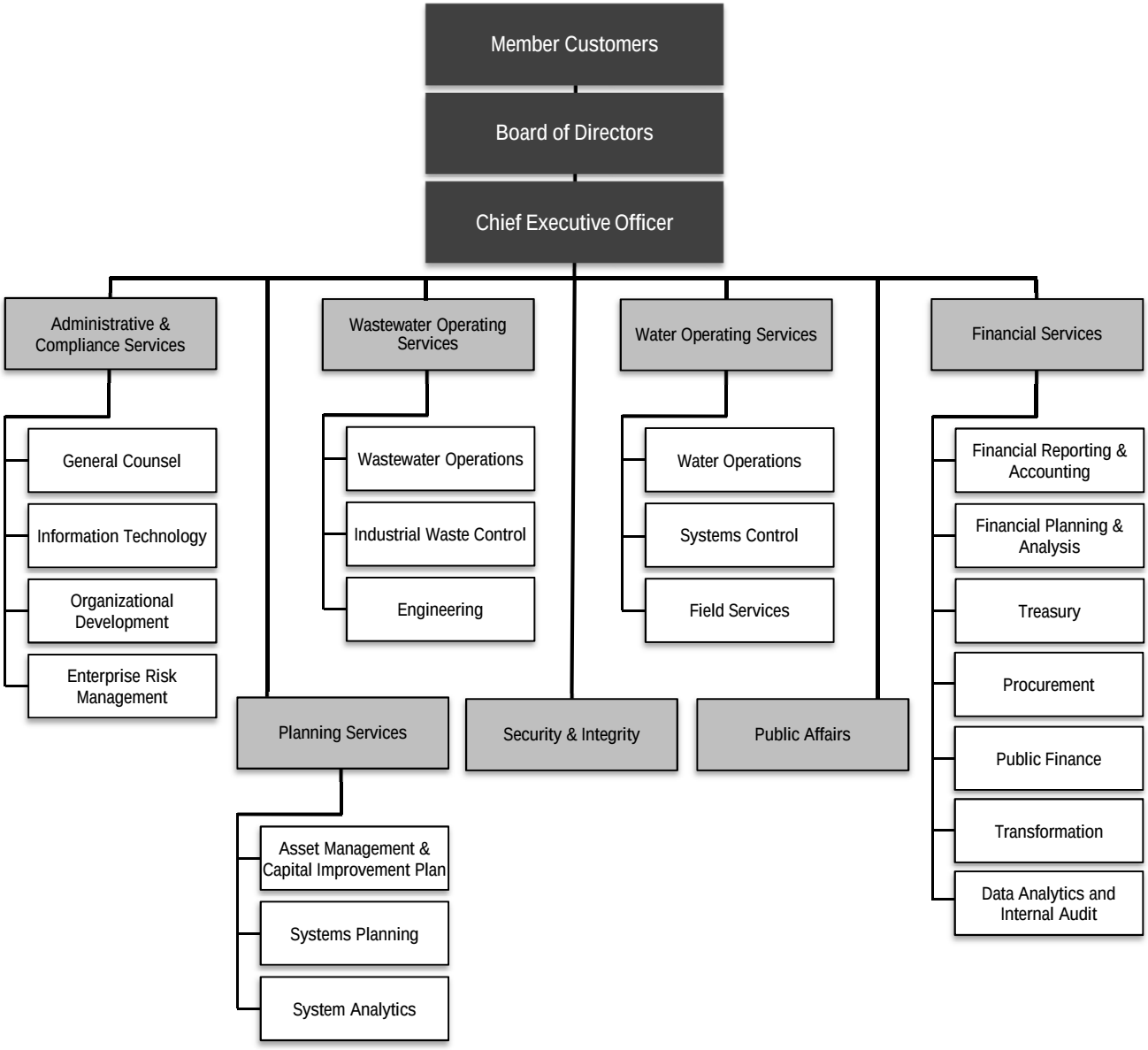
When we say "our" system, it is "our" system that we mutually support and foster with our member partners, team members, vendor community, Board of Directors, other stakeholders and the public. Thank you for your continued engaged participation and interest.



Sue F. McCormick
Chief Executive Officer

GLWA
Great Lakes Water Authority

Organizational Line of Reporting Chart



Great Lakes Water Authority Board of Directors

Freman Hendrix ..... GLWA Board Chairman; Representative for City of Detroit
Brian Baker..... GLWA Board Vice-Chair; Representative for Macomb County
Abe Munfakh, PE ..... GLWA Board Secretary; Representative for Wayne County
Robert J. Daddow..... GLWA Board Representative for Oakland County
Craig Hupy, PE..... GLWA Board Representative for the State of Michigan
Gary A. Brown .....GLWA Board Representative for City of Detroit

Great Lakes Water Authority Executive Leadership Team

Sue F. McCormick ..... Chief Executive Officer
William M. Wolfson .....Chief Administrative and Compliance Officer
Nicolette N. Bateson, CPA..... Chief Financial Officer/Treasurer - Financial Services
Cheryl D. Porter.....Chief Operating Officer - Water & Field Services
Navid Mehram, PE ..... Chief Operating Officer - Wastewater Operating Services
Suzanne R. Coffey, PE.....Chief Planning Officer
Jeffrey E. Small .....Chief Information Officer
Terri Tabor Conerway ..... Chief Organizational Development Officer
W. Barnett Jones.....Chief Security and Integrity Officer
Randal Brown .....General Counsel
Michelle A. Zdrodowski .....Chief Public Affairs Officer

Mission Statement

To exceed our customers' expectations by utilizing best practices in the treatment and transmission of water and wastewater, while promoting healthy communities and economic growth.

Rehmann

Rehmann Robson

675 Robinson Rd.
Jackson, MI 49203
Ph: 517.787.6503
Fx: 517.788.8111
rehmann.com

INDEPENDENT AUDITORS' REPORT

December 14, 2018

To the Board of Directors of the
Great Lakes Water Authority
Detroit, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Independent Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on auditor judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and each major fund of the Great Lakes Water Authority as of June 30, 2018, and the respective changes in financial position and cash flows thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis and the schedules for the pension plan, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the required supplementary information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Authority's basic financial statements. The introductory section, combining and individual fund schedules, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory section, combining and individual fund schedules and the statistical section are the responsibility of management and have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards,* we have also issued, under separate cover, our report dated December 14, 2018 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.



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MANAGEMENT'S DISCUSSION AND ANALYSIS

Management's Discussion and Analysis

June 30, 2018

The management of the Great Lakes Water Authority (GLWA or Authority) presents this discussion and analysis of GLWA's financial position and changes in financial position as of and for the fiscal year ended June 30, 2018. The Management's Discussion and Analysis (MD&A) should be read in conjunction with GLWA's basic financial statements and the related notes to the financial statements. Capitalized terms not otherwise defined in the MD&A shall have the meaning given such terms in the transmittal letter from the Chief Executive Officer of GLWA that accompanies the financial statements and the MD&A.

Introduction to the Great Lakes Water Authority

The regional water system is one of the largest in the United States, both in terms of water produced and population served. The Water System currently serves an area of 1,790 square miles located in eight Michigan counties and an estimated population of nearly 3.8 million or approximately 38 percent of Michigan's population. Suburban wholesale service contracts comprise approximately 82 percent of the population served by the Authority while the retail water customers served by DWSD comprise the remaining 18 percent.

The regional sewer system is one of the largest in the United States, both in terms of treatment capacity and population served. The Sewer System currently serves an area of 944 square miles located in three Michigan counties and an estimated population of nearly 2.8 million or approximately 28 percent of Michigan's population. Suburban wholesale service contracts comprise approximately 77 percent of the population served by the Authority, while retail sewer customers served by the City of Detroit Water and Sewerage Department comprise the remaining 23 percent.

GLWA began operations on January 1, 2016. This fiscal year ended June 30, 2018 report represents the second full twelve-month report for GLWA. Now, with two years of information available, comparative information for the fiscal year-ended June 30, 2017 has been provided for total business-type activities in the basic financial statements.

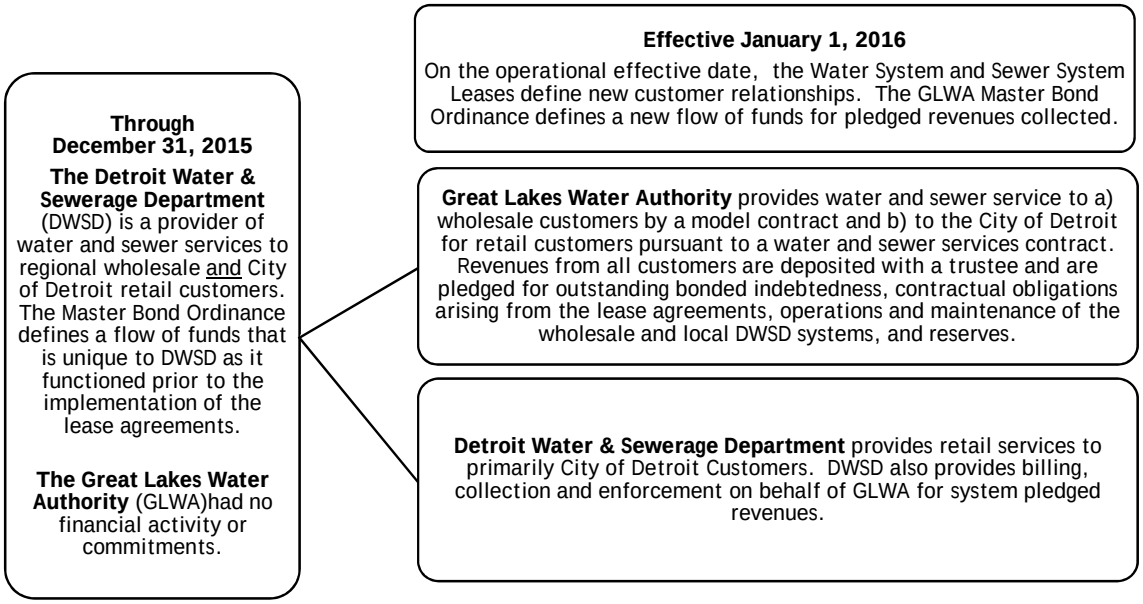
Creation of a Regional Authority

The creation of a regional water authority was an outcome of the City of Detroit's Chapter 9 Bankruptcy. Collaboration among regional stakeholders, supported by mediation proceedings, resulted in a "Memorandum of Understanding Regarding the Formation of The Great Lakes Water Authority" signed on September 9, 2014 by the Mayor of the City of Detroit, the Chief Executives of Wayne, Oakland, and Macomb counties, and the Governor of the State of Michigan. The agreement established a framework for a regional water and sewer authority to be established pursuant to Act 233, Public Acts of Michigan, 1955, as amended. The purpose of GLWA is to operate, control, and improve the regional assets of both the Water System and Sewer System owned by the City and which were operated by DWSD. The purpose of DWSD is to be the service provider for the retail system which is largely the City of Detroit customer base.

Management's Discussion and Analysis

Subsequently, on June 12, 2015, the City of Detroit and GLWA entered into a Regional Water Supply Lease, a Regional Sewage Disposal Lease (collectively the "Leases") and a Water and Sewer Services Agreement ("WSSA"). Prior to implementation of the Leases, several conditions precedent were necessary to establish the financial and legal parameters before GLWA could assume control of the Regional Systems. Those conditions precedent included execution of the Leases, WSSA, a Shared Services Agreement, and a Detroit General Retirement ("GRS") pension agreement; adoption of a Master Bond Ordinance ("MBO") for both the Water System and the Sewer System; confirmation from the Michigan Department of Environmental Quality that all permits were secured for the Leased Facilities; certification from the bond trustee that no less than 51 percent of bondholders of the outstanding DWSD Water Bonds and DWSD Sewer Bonds, respectively, consented to the adoption by GLWA of the Master Bond Ordinance ("MBO") for the Water System and the Sewer System and to the assumption by GLWA of the outstanding DWSD Water Bonds and DWSD Sewer Bonds on the Effective Date; certification from the feasibility consultant that GLWA had the ability to issue at least one dollar of additional indebtedness at each level of lien priority pursuant to the Additional Bonds Test set forth in the MBO for each system; legal opinions that each Lease is valid, binding, and enforceable and that the rates adopted by DWSD for fiscal year 2016 for the wholesale and City customers were binding and effective; and all necessary consents to the assignment of the wholesale customer contracts. On December 17, 2015, the GLWA Board of Directors determined that all conditions precedent were satisfied to commence operations on January 1, 2016.

Since GLWA assumed the outstanding bonded indebtedness, retail customer revenues are pledged for payment of outstanding bonded indebtedness assumed by GLWA. For this reason, pursuant to the terms of the Leases, DWSD is GLWA's agent for retail billing, collections and enforcement. The chart below depicts the DWSD and GLWA customer relationship and the impact of the MBO flow of funds.



Activity for the Leases was recorded based upon GASB 69, *Government Combinations and Disposals of Government Operations.* This required lease accounting resulted in the following Statement of Net Asset categories. An explanation of those categories and how they relate to the leases and the establishment of the Authority's opening Statement of Net Assets is below:

Capital Assets: Capital assets subject to the Leases were recorded at "acquisition value" based upon an inventory valuation performed by a certified appraisal firm as of January 1, 2016. This resulted in an overall increase in capital asset value from the predecessor entity's historical cost. Accordingly, the depreciable lives were reviewed and, in several cases shortened, which has increased annual depreciation expense.

Bonded Indebtedness: The outstanding bonded indebtedness of the predecessor entity was assumed in its entirety by GLWA. GASB 69 also required debt to be recorded at acquisition value.

Net Pension Liability: The net pension liability represents the Regional Systems' share of the frozen, defined benefit City of Detroit GRS pension assigned to DWSD in the City of Detroit's Chapter 9 Bankruptcy Plan of Adjustment. On January 24, 2017, the parties agreed that 70.3 percent of the liability was allocable to the GLWA regional operations and 29.7 percent to DWSD and is the basis of allocation for future pension contributions. That net pension liability is further subdivided between the Water System and the Sewer System for each entity.

Obligation Payable: The obligation payable represents the Regional Systems' share of the B and C Note Obligations assigned to DWSD in the City of Detroit's Chapter 9 Bankruptcy Plan of Adjustment. The B and C Note Obligations refers to the debt service on City of Detroit Financial Recovery Bonds dated December 10, 2014. Those bonds were issued to satisfy claims relating to the City's pension obligation certificates and postemployment healthcare benefits. GLWA's portion of the liability was estimated at 70.3 percent of the total liability consistent with the allocation applied to the net pension liability.

Beginning Net Position: The acquisition value of assets acquired exceeded the liabilities assumed by $736.5 million in total with $457.9 million attributable to the Water System and $278.6 million attributable to the Sewer System. In accordance with GASB 69, the opening capital assets were adjusted by an amount to establish a total net position of zero as of January 1, 2016.

Contractual Obligation Receivable: This represents DWSD's allocable portion of the long-term bonded indebtedness assumed by GLWA on January 1, 2016. This receivable is amortized annually in an agreed upon amount that approximates debt service. If new debt is issued on behalf of DWSD, the receivable is increased.

Lease Payable: The lease payable is the net present value of the lease payment of $50 million per year for 40 years payable to the DWSD with $22.5 million paid to the DWSD local water system and $27.5 million paid to the DWSD local sewer system based on a 4.17 percent borrowing rate for both systems.

Management's Discussion and Analysis

Financial Highlights

Total business-type current assets of $880.1 million exceed current liabilities of $283.1 million by $597.0 million in total or 3.1 times. For the Water System, current assets of $479.9 million exceed current liabilities of $139.1 million by $340.8 million in total or 3.45 times. For the Sewer System, current assets of $400.2 million exceed current liabilities of $144.1 million by $256.1 million in total or 2.8 times.

The liabilities and deferred inflows of resources of the business-type activities exceeded the assets and deferred outflows of resources as of June 30, 2018 by $178.7 million (a net deficit). The net deficit for the water fund was $60.4 million and $118.3 million for the sewage disposal fund.

The largest category of expense is depreciation at $331.2 million in total with $144.0 million for the water fund and $187.2 million for the sewage disposal fund. The second largest category of expense is interest expense at $300.4 million in total with $139.3 million for the water fund and $161.1 million for the sewage disposal fund. The Authority implemented GASB 89 during this fiscal year and no longer capitalizes interest expense.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. The basic financial statements are comprised of the following:

The *statement of net position* presents information on all of the Authority's assets, deferred outflows of resources, liabilities, and deferred inflows of resources, with the residual reported as net position.

The *statement of revenues, expenses and changes in net position* presents information showing how the Authority's net position changed during the year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows.* Thus, revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods.

The *statement of cash flows* provides information about the Authority's cash receipts, cash payments and net changes in cash and cash equivalents resulting from operating, investing and capital and non-capital financing activities for the fiscal year.

The *notes to the financial statements* provide additional information that is essential to a full understanding of the data provided in the basic financial statements.

This report also contains other supplementary information in addition to the basic financial statements themselves. These schedules provide additional financial, budgetary, statistical, trend, and economic information that may be helpful to the readers of these financial statements.

Management's Discussion and Analysis

The Authority presents a combining statement for each system in the supplementary financial information classified into three categories that align with the Authority's strategic and budgetary focus of managing capital investment for both the Regional Water System and Regional Sewer System: 1) operation and maintenance (low capital investment), 2) improvement and extension (moderate capital investment and financial mechanism to lower borrowings and the related the cost of capital over the long term), and 3) construction projects (high capital investment). The water and sewage disposal funds together comprise the activity of these three categories of the Authority in total. The separate water and sewage disposal funds are required by the MBO, a separate credit rating is established for each fund, and the customers and services provided by each system are separate and distinct (although some may geographically overlap).

Financial Analysis

Summaries of the basic financial statements and related commentaries are presented below.

Net Position

Net position is defined by the accounting standards as the residual of all other elements presented in a statement of financial position. It is the difference between (a) assets and deferred outflows of resources and (b) liabilities and deferred inflows of resources. A net deficit occurs when the liabilities and deferred inflows exceed assets and deferred outflows. Deferred inflows and deferred outflows generally relate to financing activity and GLWA's share of the GRS pension obligation. In total, GLWA ended June 30,2018 with a $178.7 million net deficit. The net deficit for the water fund was $60.4 million and $118.3 million for the sewage disposal fund.

	Net Position	
	2018	**2017**
Current and other assets	$ 1,725,147,253	$ 1,557,125,361
Restricted assets	489,334,606	573,822,933
Capital assets	4,690,263,860	4,908,786,837
Total assets	6,904,745,719	7,039,735,131
Deferred outflows of resources	332,991,599	357,600,919
Current liabilities	283,126,328	318,134,242
Long-term debt	5,714,095,283	5,842,482,161
Net pension liability	178,961,907	194,075,547
Other liabilities	1,113,876,457	1,014,782,772
Total liabilities	7,290,059,975	7,369,474,722
Deferred inflows of resources	126,432,107	130,696,321
Net position		
Net investment in capital assets	350,745,726	528,875,506
Restricted for debt service	125,235,904	134,125,957
Restricted for capital acquisition	243,238,577	323,905,502
Restricted for payment assistance program	5,771,110	5,336,117
Unrestricted (deficit)	(903,746,081)	(1,095,078,075)
Total net position	$ (178,754,764)	$ (102,834,993)

Management's Discussion and Analysis

There are three general components of a net position or deficit: 1) net investment in capital assets (in its simplest form, capital assets acquired less debt incurred to acquire those assets); 2) restricted (such as legally required bond reserves or net proceeds from bonds restricted for capital spending); and 3) unrestricted.

Net investments in capital assets is the largest component of the net position with a total balance of $350.7 million ($60.8 million the water system and $289.9 for the sewage disposal system). Increases during the year were attributable to the acquisition of assets and repayment of debt which were offset by depreciation expense.

Net position restricted for debt service represents amounts that are required by the related MBO or other third-party agreements to be used for the repayment of debt. The total amount restricted at year end was $125.2 million with $23.2 million in the water system and $102.0 million for the sewage disposal system.

Net position restricted for capital acquisition primarily represents unspent bond proceeds of $243.2 million in total with $140.7 million in the water system and $102.5 million in the sewage disposal system.

The remaining unrestricted deficit is significant: a total of $903.7 million with $287.6 million for the water system and $616.1 for the sewage disposal system. Unrestricted net position (deficit) is generally defined as the net result of the other components of net position. There has been an improvement of $191.3 million in the unrestricted net position since 2017. This unrestricted deficit is representative of numerous cumulative historical financial activities via the predecessor entity. The largest dollar amounts were driven by swap termination fees paid by debt and capital financed assets that were subsequently written off. Addressing this deficit is a top priority for the GLWA Board and management but recognizes that it will take time. GLWA continues to optimize its operations, focus on financial planning with a biennial budget, annually update the five-year capital and financial plan, and expand its expertise in asset management. Evidence of those efforts are demonstrated by key financial performance measures. These include strong days cash on hand, debt service coverage well above the minimum requirements, achievement of revenue targets, and positive operations and maintenance expense budget variances. The performance measures in the table below are presented in the Supplementary Information section of this report.

Financial Performance Measure	Water	Sewage Disposal
Days cash on hand (Schedule of Days Cash – Liquidity)	1066 days	432 days
Debt service coverage - (all bonds including junior lien state revolving fund junior lien) (Pledges of Revenue and Debt Service Coverage)	1.51x	1.29x
Revenue target (Schedules of Revenue Requirement)	14.7 million or 4.5% positive budget variance	9.3 million or 2.0% positive budget variance
Operations & maintenance budget (Schedules of Operations and Maintenance Expense)	$6.6 million or 5.75% positive budget variance	$14.0 million or 7.35% positive budget variance

Management's Discussion and Analysis

Change in Net Position

The following is a comparative summary of the business-type activities changes in net position for the current and prior year (followed by a detailed discussion of the significant changes by activity):

	Changes in Net Position	
	2018	2017
Operating revenues	$ 811,894,703	$ 857,557,026
Operating expenses	618,232,739	582,815,592
Operating income	193,661,964	274,741,434
Nonoperating expenses	(269,581,735)	(268,922,991)
Income before contributions and special item	(75,919,771)	5,818,443
Capital contributions	-	320,707
Special item - MOU with DWSD	-	(94,290,263)
Change in net position	(75,919,771)	(88,151,113)
Net position, beginning	(102,834,993)	(14,683,880)
Net position, end of year	$ (178,754,764)	$ (102,834,993)

Water

Operating revenues, as shown in the table below, are primarily from wholesale water charges of $323.1 million (95.51 percent of Water System revenues). GLWA provides services to 87 customers in addition there is one emergency backup service customer. Revenue and charge stability are important goals for GLWA and its member partners.

1. 40 percent is based on the average annual sales for each customer from their 36 prior months of usage ending September 30th each year.
2. 60 percent is based on fixed monthly charges.

Fiscal year 2018 wholesale revenue billed was 104% of budget meeting the goal of revenue stability.

Management's Discussion and Analysis

Local system revenues of $15.1 million account for 4.47 percent of the total operating revenue. Pursuant to the terms of the WSSA with DWSD, a $20.7 million credit is applied against forecasted water purchases in the charge methodology. This credit replaces a previous ownership benefit that was in place prior to the Effective Date of the Regional System.

	Amount	Percent of Operating Revenues
Wholesale customer charges	$ 323,117,344	95.51%
Local system charges	15,130,600	4.47%
Other revenues	64,200	0.02%
Total operating revenues	$ 338,312,144	100%

Operating expenses of $254.6 million represent 75.3 percent of total operating revenue which consists primarily of depreciation expense and operations and maintenance activities. Depreciation is the larger category of expense at $144 million or 56.6 percent of operating expense. Amortization was .8% of operating expenses. The remaining 42.6 percent of operating expenses is shown in the table below. Given the nature of GLWA's water operations, it is expected that personnel, contractual services, and utilities would represent the higher dollar amount. Contractual services include field services contracts for timely repairs to minimize disruption in service, technology related services for both operational and enterprise data networks, and outsourcing of janitorial, fleet, and other functions.

	Amount	Percent of Operating Expenses
Personnel	$ 41,845,295	16.4%
Contractual services	35,794,549	14.1%
Utilities	26,871,081	10.6%
Chemicals	4,804,768	1.9%
Supplies and other expenses	9,543,615	3.7%
Capital program allocation	(713,779)	-0.3%
Shared services allocation	(9,615,146)	-3.8%
Total operating expenses before depreciation and amortization	$ 108,530,383	42.6%

Operating income after operating expenses (including depreciation) equals $83.7 million or 24.7 percent of operating revenue.

Net nonoperating expense of $107.7 million is primarily related to interest expense of $139.3 million of which 118.2 million is from debt service. The remainder of interest is from the water lease, obligation payable and raw water rights lease. The largest offset to the expense is interest revenue on the obligations receivable which is also related to the terms of the Water Lease.

Sewage Disposal

Operating revenues, as shown in the table below, are primarily from wholesale sewer charges of $269 million account (56.8 percent of Sewer System revenues) pursuant to from 18 services contracts. Wholesale contract charges are based on a "share" percentage of the annual revenue requirement billed one-twelfth each month. The shares are established based upon historical flows and are formally revisited every three years. The result is no revenue shortfall or overestimation.

Local system revenues of $179 million account for 37.8 percent of total operating revenues. Pursuant to the terms of the WSSA with DWSD, a $5.516 million credit is applied against sewer charges in the charge methodology. This credit replaces a previous ownership benefit that was in place prior to the Effective Date of the regional system.

The remaining 5.4 percent of operating revenue is due to other charges such as industrial waste charges and pollutant surcharges which are charged to non-residential users.

	Amount	Percent of Operating Revenues
Wholesale customer charges	$ 268,978,831	56.8%
Industrial waste charges	14,334,979	3.0%
Pollutant surcharges	6,908,404	1.5%
Local system charges	178,969,200	37.8%
Other revenues	4,391,145	0.9%
Total operating revenues	$ 473,582,559	100%

Operating expenses of $363.6 million represent 76.8 percent of total operating revenue which consists primarily of depreciation expense and operations and maintenance activities. Depreciation is the larger category of expense at $187.3 million or 51.5 percent of operating expense. The remaining 48.5 percent of operating expenses is shown in the table below. Given the nature of GLWA's wastewater operations, it is expected that personnel, contractual services, and utilities would represent the higher dollar amount. Contractual services include operation and management of the biosolids dryer facility, timely repairs for the wastewater resources recovery facility, staff augmentation for operations, technology related services for both operational and enterprise data networks, and outsourcing of janitorial, fleet, and other functions.

	Amount	Percent of Operating Expenses
Personnel	$ 53,680,162	14.8%
Contractual services	64,082,761	17.6%
Utilities	26,823,299	7.4%
Chemicals	8,073,045	2.2%
Supplies and other expenses	24,982,773	6.9%
Capital program allocation	(969,671)	-0.3%
Shared services allocation	(292,965)	-0.1%
Total operating expenses before depreciation	$ 176,379,404	48.5%

Operating income after operating expenses (including depreciation) equals $110 million or 23.2 percent of operating revenue.

Net nonoperating expense of $161.9 million is primarily related to interest expense of $161.1 million of which $137.6 million is related to debt service. The remainder of interest is from the sewer lease and obligation payable. The largest offset to the expense is interest revenue on the obligations receivable which is also related to the terms of the Sewer Lease.

Capital Assets and Debt Administration

GLWA's investment in capital assets as of June 30, 2018 is $4.7 billion (net of accumulated depreciation) with $1.9 billion assigned to the Water System and $2.8 billion assigned to the Sewer System. This investment in capital assets includes land, buildings, plants, transmission lines, vehicles and other equipment. Total net capital assets decreased by $218.5 million or 4.5 percent when compared to the prior year. The net decrease is primarily attributable to depreciation in excess of current year additions.

Water Fund

Water System additions were largely due to a net increase in construction work-in-progress of $36.6 million.

Approximately one-half of that amount, $17.8 million, is due to construction related to the following projects:

- Project # 114001: 1958 Filter Rehabilitation at the Springwell Water Treatment Plant (Contracts CS-1425, CS-200, SP- 563). The project has a total budget of $ 93.5 million. Life to date costs through June 30, 2018 total $89.3 million. Fiscal year 2018 expenditures were $6.4 million. The project is expected to be completed in fiscal year 2019. Approximately $22.7 was placed into service during fiscal year 2018.

- Project # 170502: Transmission System Valve Assessment and Rehabilitation/Replacement (Contract CON-181). The project has a total budget of $15.3 million. Life to date costs which were all incurred in fiscal year 2018 total $3.4 million. Approximately $3.1 million was placed into service during fiscal year 2018.

- Project # 114003: Water Production Flow Metering Improvements (CON-133). The project has a total budget of $7.2 million. Life to date costs through June 30, 2018 total $3.4 million. Fiscal year 2018 expenditures were $3.3 million. The project is expected to be completed in fiscal year 2021.

- Project # 116002: Raw Water Supply Tunnel Improvements (DB-150). The project has a total budget of $33.1 million. Life to date costs through June 30, 2018 total $2.2 million. Fiscal year 2018 expenditures were $2.2 million. The project is expected to be completed in fiscal year 2023.

- Project # 114015: Emergency Grating Replacement (DB-112). The project has a total budget of $2.8 million. Life to date costs through June 30, 2018 total $2.7 million. Fiscal year 2018 expenditures were $2.5 million. Approximately $2.5 million was placed into service during fiscal year 2018.

- The remaining $18.8 million is attributable to 49 projects that are near closeout or are design and study contracts related to larger projects.

Sewage Disposal Fund

Sewer System additions were also largely due to a net increase in construction work-in-progress of $71.6 million.

Slightly more than one-half of that amount, $41.6 million, is due to construction related to the following projects:

- Project # 260201: Conveyance System Interceptor Rehabilitation (CON-149). The project has a total budget of $14.9 million. Life to date costs through June 20, 2018 total $8.9 million. Fiscal year 2018 expenditures were $8.8 million. The project is expected to be completed in fiscal year 2020.

- Project # 211001: Rehabilitation of Primary Clarifiers, Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery (PC-757). The project has a total budget of $54 million. Life to date costs through June 30, 2018 total $25.1 million. Fiscal year 2018 expenditures were $13.2 million. The project is expected to be completed in fiscal year 2021.

- Project # 212006: Rouge River Outfall Project (Contracts PC-797, CS-1781). The project has a total budget of $47.5 million. Life to date costs through June 30, 2018 total $26.4 million. Fiscal year 2018 expenditures were $19.6 million. The project is expected to be completed in fiscal year 2020.

- The remaining $30.0 million is attributable to 28 projects that are near closeout or are design and study contracts related to larger projects.

	GLWA's Capital Assets, Net	
	2018	2017
Land	$ 63,151,369	$ 62,900,069
Easements	354,843,720	354,843,720
Construction in progress	288,051,906	312,728,003
Site improvements	71,714,835	70,555,592
Buildings and structures	1,477,410,969	1,499,761,392
Infrastructure	1,076,353,519	1,106,299,521
Machinery and equipment	1,354,950,446	1,499,528,421
Vehicles	2,164,263	2,170,119
Leasehold improvements	1,622,833	-
Total	$ 4,690,263,860	$ 4,908,786,837

Additional information on the Authority's capital assets can be found in Note 7.

Intangible Asset and Related Obligation - Water Fund

Effective December 1, 2017, GLWA, the City of Flint (the City), Karegnondi Water Authority (KWA), Genesee County Drain Commission (GCDC) and the State of Michigan entered into a long-term partnership agreement to satisfy a number of critical water service needs across the region. Key provisions of a master agreement comprised of seven separate exhibits includes: 1) A 30-year water service contract with the City that establishes GLWA as the long-term water source for the City and credits the City of its debt service payment obligations on existing KWA bonds for the building of its water plant; 2) a long-term lease to GLWA of the 72-inch line serving the City; and 3) a 30-year contract for reciprocal, emergency water services between GLWA and GCDC.

Management's Discussion and Analysis

The 30-year water service contract with the City includes a license to raw water rights on 17.46 MGD of the 18 MGD purchased by Flint as part of KWA bond obligation. These licensed rights constitute an intangible asset under governmental accounting standards. Therefore, the Authority has recorded an offsetting intangible asset and lease obligation of approximately $107 million associated with this agreement as part of the fiscal year ending June 30, 2018 financial statements. The Authority recognized $2.1 million of amortization expense through June 30, 2018 on the intangible asset. The lease obligation for the raw water rights was reduced by $0.8 million during the year.

Long-term Debt. At year-end, the Authority had $5.4 billion of long-term debt. All the outstanding bonds are revenue bonds, including capital appreciation bonds and state revolving fund loans. Of the total with $2.3 billion is assigned to the Water System and $3.1 billion assigned to the Sewer System.

Water Fund

The total outstanding bonds for the Water System is $2.3 billion, decreasing by $47.8 million from the prior year. No new debt was issued for the year ended June 30, 2018 other than state revolving fund activity.

Repayment of GLWA bonds issued are funded by charges to all member partners. Repayment of the debt service assigned to DWSD for Local System improvements are paid from retail customer collections by DWSD.

Less than 1.1 percent of the total indebtedness is issued through the State of Michigan revolving fund loan program for the benefit of the Water System. The Water System received $12.5 million in new state revolving fund loans and received a $2.9 million in loan forgiveness. The state revolving fund loan activity for the year was a pass-through to DWSD for system improvements.

Sewage Disposal Fund

The total outstanding bonds for the Sewer System is $3.1 billion, decreasing by $67.6 million from the prior year. No new debt was issued for the year ended June 30, 2018 other than state revolving fund activity.

Repayment of GLWA bonds issued are funded by charges to all member partners. Repayment of the debt service assigned to DWSD for Local System improvements are paid from retail customer collections by DWSD.

Approximately 15.4 percent of the total indebtedness is issued through the State of Michigan revolving fund loan program for the benefit of the Sewer System. The Sewer System received $34.7 million in new state revolving fund loans.

	GLWA's Outstanding Debt		
	Water Fund	Sewage Disposal Fund	Total
Revenue bonds	$ 2,284,825,000	$ 2,584,065,000	$ 4,868,890,000
Capital appreciation bonds	-	17,250,000	17,250,000
State revolving loans	25,435,902	475,677,540	501,113,442
Total	$ 2,310,260,902	$ 3,076,992,540	$ 5,387,253,442

Management's Discussion and Analysis

Credit Ratings

As of June 30, 2018, the same ratings were in place since the last rating agency reviews in September 2016. For both the Water and Sewage Disposal Funds, Fitch Ratings has rated senior lien debt at A and second lien at A-; Standard & Poor's has rated senior lien debt at A- and second lien at BBB+; and Moody's has rated senior lien debt at A3 and second lien at Baa1.

Additional information on the Authority's long-term debt can be found in Note 11.

Economic Factors Affecting Next Year's Operations and Rates

On June 20, 2018, the GLWA Board adopted the biennial budget for the Authority for fiscal years 2019 and 2020. That two-year financial plan remains true to a foundational commitment to control the budget within a 4 percent revenue cap as further described below.

Water Fund

For FY 2019 the budget increased by one percent. This translated into a system average charge increase of 1.6 percent and wholesale member partner average charge increase of 0.1 percent depending on each customers usage in relation to other customers.

Sewage Disposal Fund

For FY 2019 budget increased by one percent. This translated into a system average charge increase of 0.1 percent and wholesale member partner average charge increase of 1.3 percent.

Requests for Information

This financial report is designed to provide a general overview of GLWA's finances for all those with an interest in the Authority's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Great Lakes Water Authority, Office of the Chief Financial Officer, 735 Randolph, Detroit, Michigan 48226. This report is also available on the Authority's website at www.glwater.org.

BASIC FINANCIAL STATEMENTS

GREAT LAKES WATER AUTHORITY

Statement of Net Position

June 30, 2018
With Comparative Amounts at June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Assets				
Current assets:				
Cash and cash equivalents	$ 310,085,221	$ 199,056,556	$ 509,141,777	$ 470,231,842
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392	132,967,081
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827	288,378
Investments	7,004,525	9,506,712	16,511,237	2,283,028
Restricted investments	1,234,954	31,790,386	33,025,340	32,541,021
Receivables:				
Billed	38,272,740	50,439,450	88,712,190	88,694,341
Unbilled	29,229,709	25,200,108	54,429,817	53,818,603
Other	5,850	3,723,036	3,728,886	3,158,350
Allowance for doubtful accounts	(6,221,815)	(32,863,001)	(39,084,816)	(35,352,009)
Due from other governments	23,588,754	24,339,106	47,927,860	50,789,041
Due from other funds	330,293	3,447,927	3,778,220	-
Contractual obligation receivable, current portion	13,560,086	11,253,800	24,813,886	23,339,242
Loan receivable - DWSD	-	9,367,355	9,367,355	-
Prepaid items and other assets	3,265,972	1,683,659	4,949,631	3,526,568
Inventories	-	8,471,626	8,471,626	8,509,454
Total current assets	479,872,458	400,248,770	880,121,228	834,794,940
Noncurrent assets:				
Restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059	306,318,331
Restricted investments	150,436,225	143,261,763	293,697,988	101,708,122
Contractual obligation receivable	477,039,443	335,574,500	812,613,943	830,432,680
Loan receivable - DWSD	-	19,932,645	19,932,645	-
Prepaid lease	11,250,000	13,750,000	25,000,000	25,000,000
Assets not subject to depreciation	434,684,895	271,362,100	706,046,995	730,471,792
Capital assets being depreciated, net	1,499,118,693	2,485,098,172	3,984,216,865	4,178,315,045
Intangible asset - raw water rights, net	104,919,365	-	104,919,365	-
Prepaid insurance on debt	13,002,376	16,931,255	29,933,631	32,694,221
Total noncurrent assets	2,708,712,703	3,315,911,788	6,024,624,491	6,204,940,191
Total assets	3,188,585,161	3,716,160,558	6,904,745,719	7,039,735,131
Deferred outflows of resources				
Deferred charge on refunding	94,431,823	186,544,140	280,975,963	297,646,441
Deferred pension amounts	18,645,719	33,369,917	52,015,636	59,954,478
Total deferred outflows of resources	113,077,542	219,914,057	332,991,599	357,600,919

continued...

GREAT LAKES WATER AUTHORITY

Statement of Net Position

June 30, 2018
With Comparative Amounts at June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Liabilities				
Current liabilities:				
Accounts and contracts payable	$ 33,754,534	$ 34,077,602	$ 67,832,136	$ 64,298,400
Accrued salaries, wages and benefits	4,734,956	-	4,734,956	3,190,038
Other accrued liabilities	12,679,692	-	12,679,692	2,252,616
Due to other governments	11,935,868	47,539	11,983,407	61,242,386
Due to other funds	3,447,927	330,293	3,778,220	-
Interest payable	39,322,324	41,108,994	80,431,318	80,340,520
Current portion of:				
Long-term debt	20,569,843	61,186,207	81,756,050	89,314,212
Leases payable	4,814,476	5,884,359	10,698,835	10,262,609
Lease obligation - raw water rights	2,999,458	-	2,999,458	-
Obligation payable	167,794	377,419	545,213	519,251
Accrued compensated absences	2,212,326	717,086	2,929,412	2,837,148
Accrued workers' compensation	228,239	-	228,239	25,000
Claims and judgments	2,195,000	334,392	2,529,392	3,852,062
Total current liabilities	139,062,437	144,063,891	283,126,328	318,134,242
Noncurrent liabilities:				
Long-term debt	2,545,529,255	3,168,566,028	5,714,095,283	5,842,482,161
Long-term leases payable	421,488,871	515,153,064	936,641,935	947,340,770
Lease obligation - raw water rights	103,241,118	-	103,241,118	-
Obligation payable	17,097,709	38,458,178	55,555,887	56,101,100
Accrued compensated absences	2,174,506	-	2,174,506	2,288,125
Accrued workers' compensation	75,000	-	75,000	225,000
Claims and judgments	50,000	7,500,000	7,550,000	262,500
Other noncurrent liabilities	2,634,471	6,003,540	8,638,011	8,565,277
Net pension liability	64,151,352	114,810,555	178,961,907	194,075,547
Total noncurrent liabilities	3,156,442,282	3,850,491,365	7,006,933,647	7,051,340,480
Total liabilities	3,295,504,719	3,994,555,256	7,290,059,975	7,369,474,722
Deferred inflows of resources				
Deferred amounts for swap terminations	80,342	189,808	270,150	299,461
Deferred gain on refunding	59,252,431	46,654,836	105,907,267	112,080,430
Deferred pension amounts	7,260,572	12,994,118	20,254,690	18,316,430
Total deferred inflows of resources	66,593,345	59,838,762	126,432,107	130,696,321
Net position				
Net investment in capital assets	60,799,635	289,946,091	350,745,726	528,875,506
Restricted for debt service	23,239,368	101,996,536	125,235,904	134,125,957
Restricted for capital acquisition	140,732,216	102,506,361	243,238,577	323,905,502
Restricted for payment assistance program	2,462,214	3,308,896	5,771,110	5,336,117
Unrestricted deficit	(287,668,794)	(616,077,287)	(903,746,081)	(1,095,078,075)
Total net position	$ (60,435,361)	$ (118,319,403)	$ (178,754,764)	$ (102,834,993)

concluded.

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Statement of Revenues, Expenses and Changes in Fund Net Position

For the Year Ended June 30, 2018
With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Operating revenues				
Wholesale customer charges	$ 323,117,344	$ 268,978,831	$ 592,096,175	$ 594,426,876
Industrial waste charges	-	14,334,979	14,334,979	14,381,106
Pollutant surcharges	-	6,908,404	6,908,404	5,206,294
Local system charges	15,130,600	178,969,200	194,099,800	202,794,400
Bad debt recovery	-	-	-	40,172,155
Other revenues	64,200	4,391,145	4,455,345	576,195
Total operating revenues	338,312,144	473,582,559	811,894,703	857,557,026
Operating expenses				
Operating expenses before depreciation and amortization:				
Personnel	41,845,295	53,680,162	95,525,457	86,156,304
Contractual services	35,794,549	64,082,761	99,877,310	90,135,859
Utilities	26,871,081	26,823,299	53,694,380	55,661,469
Chemicals	4,804,768	8,073,045	12,877,813	14,765,181
Supplies and other expenses	9,543,615	24,982,773	34,526,388	20,162,690
Capital program allocation	(713,779)	(969,671)	(1,683,450)	(2,128,078)
Shared services allocation	(9,615,146)	(292,965)	(9,908,111)	(11,704,210)
Total operating expenses before depreciation and amortization	108,530,383	176,379,404	284,909,787	253,049,215
Depreciation	143,991,815	187,250,583	331,242,398	329,766,377
Amortization of intagible asset - raw water rights	2,080,554	-	2,080,554	-
Total operating expenses	254,602,752	363,629,987	618,232,739	582,815,592
Operating income	83,709,392	109,952,572	193,661,964	274,741,434
Nonoperating revenues (expenses)				
Earnings on investments	6,129,530	5,266,255	11,395,785	4,042,790
Interest on obligations receivable	23,351,220	15,505,300	38,856,520	42,332,428
Interest expense	(139,343,204)	(161,052,102)	(300,395,306)	(291,592,097)
Costs of issuance and amortization of debt related items	13,837,585	(5,153,300)	8,684,285	(14,937,182)
Legacy pension expense	(8,933,691)	(15,988,471)	(24,922,162)	(7,021,006)
WRAP (Water Residential Assistance Program)	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Other	(544,813)	(709,537)	(1,254,350)	661,734
Gain (loss) on disposal of capital assets	(6,225)	2,469,703	2,463,478	(250,826)
Loss on impairment of capital assets	(654,451)	-	(654,451)	(31,499)
Total nonoperating expenses	(107,670,603)	(161,911,132)	(269,581,735)	(268,922,991)
Income before contributions and special item	(23,961,211)	(51,958,560)	(75,919,771)	5,818,443
Capital contributions	-	-	-	320,707
Special item - memorandum of understanding with DWSD	-	-	-	(94,290,263)
Change in net position	(23,961,211)	(51,958,560)	(75,919,771)	(88,151,113)
Net position (deficit), beginning of year	(36,474,150)	(66,360,843)	(102,834,993)	(14,683,880)
Net position (deficit), end of year	$ (60,435,361)	$ (118,319,403)	$ (178,754,764)	$ (102,834,993)

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2018
With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Cash flows from operating activities				
Cash received from customers	$ 345,806,584	$ 469,355,447	$ 815,162,031	$ 797,342,886
Cash payments to suppliers for goods and services	(74,885,689)	(120,179,052)	(195,064,741)	(143,744,039)
Cash payments for employee services	(40,069,277)	(52,672,665)	(92,741,942)	(127,285,222)
Cash received (paid) for interfund services	3,117,634	(3,117,634)	-	-
Cash paid for DWSD budget stabilization	-	-	-	(418,741)
Cash payments to other governments for:				
MOU and bifurcation liabilities	(13,968,170)	(30,924,662)	(44,892,832)	-
B&C obligation payable	(3,187,796)	(6,832,237)	(10,020,033)	-
Cash payments for WRAP	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Cash payments for GLWA share pension agreement	(11,440,800)	(20,475,400)	(31,916,200)	(31,916,200)
Cash received for DWSD nonoperating pension	4,827,211	3,370,621	8,197,832	7,484,210
Cash paid for DWSD nonoperating pension	(5,650,328)	(4,095,900)	(9,746,228)	(6,355,800)
Cash received for DWSD WRAP	448,200	369,000	817,200	785,900
Cash payments for DWSD WRAP	(395,805)	(348,661)	(744,466)	(424,667)
Cash received (paid) for DWSD budgetary excess (shortfall)	8,613,320	(18,480,620)	(9,867,300)	43,749,198
Nonoperating cash received (paid)	50,886	(867)	50,019	1,355,774
Cash payments from other receipts	-	-	-	477,474
Cash payments from fire remediation for operations	-	3,685,867	3,685,867	-
Principal payments received on obligation receivable	11,946,700	11,262,300	23,209,000	13,428,392
Interest received on obligation receivable	23,472,763	15,505,300	38,978,063	42,417,814
Payments of long-term debt proceeds to DWSD	-	-	-	(56,995,800)
Payments for bond issuance costs on DWSD debt	-	-	-	(222,234)
Payments of state revolving fund loan proceeds to DWSD	(9,968,428)	-	(9,968,428)	(2,032,280)
Transfer affordability bank account to DWSD	-	-	-	(977,278)
Net cash provided by operating activities	237,210,451	244,171,857	481,382,308	534,542,054
Cash flows from noncapital financing activities				
Proceeds from long-term debt for DWSD	-	-	-	57,218,034
Proceeds from state revolving fund loans for DWSD	9,529,926	-	9,529,926	2,436,781
Interest payments	(99,283)	-	(99,283)	(451,023)
Net cash provided by noncapital financing activities	9,430,643	-	9,430,643	59,203,792
Cash flows from capital and related financing activities				
Proceeds from fire remediation	-	200,533	200,533	5,000,000
Proceeds from long-term refunding debt	-	-	-	1,482,167,976
Payment to bond refunding escrow agent	-	-	-	(1,303,556,172)
Proceeds from sale of assets	650	-	650	-
Proceeds from state revolving fund loans	3,003,520	34,750,504	37,754,024	22,216,294
(Payments) returns of bond issuance costs	18,000	45,000	63,000	(6,688,373)
Principal payments on bonds	(57,495,000)	(102,350,000)	(159,845,000)	(154,240,000)
Principal payments on lease	(4,618,174)	(5,644,435)	(10,262,609)	(9,844,169)
Interest payments	(136,124,442)	(158,310,595)	(294,435,037)	(299,733,595)
Purchase of capital assets	(38,642,987)	(67,808,804)	(106,451,791)	(98,957,016)
Net cash used in capital and related financing activities	(233,858,433)	(299,117,797)	(532,976,230)	(363,635,055)

continued...

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2018
With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Cash flows from investing activities				
Investment purchases	$ (419,794,161)	$ (453,549,077)	$ (873,343,238)	$ (501,031,428)
Investment maturities	284,500,479	383,480,724	667,981,203	570,268,743
Interest received	4,909,839	4,562,898	9,472,737	3,500,272
Net cash provided by (used in) investing activities	(130,383,843)	(65,505,455)	(195,889,298)	72,737,587
Net change in cash and cash equivalents	(117,601,182)	(120,451,395)	(238,052,577)	302,848,378
Cash and cash equivalents, beginning of year	505,464,278	404,341,354	909,805,632	606,957,254
Cash and cash equivalents, end of year	$ 387,863,096	$ 283,889,959	$ 671,753,055	$ 909,805,632
Statement of net position classification of cash				
Cash and cash equivalents	$ 310,085,221	$ 199,056,556	$ 509,141,777	$ 470,231,842
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392	132,967,081
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827	288,378
Noncurrent restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059	306,318,331
	$ 387,863,096	$ 283,889,959	$ 671,753,055	$ 909,805,632

continued...

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2018
With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Reconciliation of operating income to net cash provided by operating activities:				
Operating income	$ 83,709,392	$ 109,952,572	$ 193,661,964	$ 274,741,434
Adjustments to reconcile operating income to net cash provided by operating activities:				
Depreciation	143,991,815	187,250,583	331,242,398	329,766,377
Amortization of intangible asset - raw water rights	2,080,554	-	2,080,554	-
Credits for raw water rights	(3,176,073)	-	(3,176,073)	-
Miscellaneous nonoperating income (expense)	50,886	(867)	50,019	1,355,774
Legacy pension expense and administrative fee	(9,329,667)	(16,697,141)	(26,026,808)	(7,715,046)
WRAP (Water Residential Assistance Program)	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Loan forgiveness pass-through to DWSD	(2,534,779)	-	(2,534,779)	(1,168,307)
Interest income on contractual obligation receivable	23,351,220	15,505,300	38,856,520	42,332,428
Interest expense on obligation payable	(709,737)	(1,596,417)	(2,306,154)	(2,332,421)
Special item	-	-	-	(94,290,263)
Changes in:				
Receivables:				
Billed	(1,813,177)	1,795,328	(17,849)	(3,018,237)
Unbilled	309,724	(920,938)	(611,214)	1,526,733
Other (excludes capital item)	(4,550)	1,709,309	1,704,759	106,489,685
Allowance for doubtful accounts	1,280,038	2,452,769	3,732,807	(88,657,233)
Due from other governments	(2,261,041)	(24,177,778)	(26,438,819)	56,899,259
Due from other funds	5,081,793	11,262,300	16,344,093	65,971
Contractual obligation receivable	(330,293)	(3,447,927)	(3,778,220)	(9,270,922)
Prepaid items and other assets (excludes investing item	(439,276)	(401,099)	(840,375)	(852,646)
Inventories	-	37,828	37,828	1,474,609
Prepaid lease	-	-	-	(25,000,000)
Accounts and contracts payable (excludes capital items)	(3,580,141)	(67,562)	(3,647,703)	(10,422,715)
Accrued salaries, wages and benefits	1,544,918	-	1,544,918	302,758
Other accrued liabilities (excludes capital items)	11,325,876	(898,800)	10,427,076	528,559
Due to other governments (excludes non-capital financing)	(13,457,945)	(35,801,034)	(49,258,979)	23,348,483
Due to other funds	3,447,927	330,293	3,778,220	(65,971)
Obligation payable including accrued interest	(159,803)	(359,448)	(519,251)	(494,524)
Accrued compensated absences	(59,181)	37,826	(21,355)	(626,037)
Accrued workers' compensation	53,239	-	53,239	(8,489,427)
Claims and judgments	2,170,000	3,794,830	5,964,830	(26,563,732)
Other noncurrent liabilities	52,395	20,339	72,734	(57,508)
Net pension liability and deferred items	(1,877,109)	(3,359,429)	(5,236,538)	(23,137,694)
Net cash provided by operating activities	$ 237,210,451	$ 244,171,857	$ 481,382,308	$ 534,542,054

concluded.

Noncash transactions

During the year the Authority applied credits to Flint billings totaling $3,176,073 for payments made by the City of Flint for the KWA bonds in the water fund. These credits are recorded as payments on the raw water lease rights which have been recorded as an intangible asset and a lease obligation payable.

The accompanying notes are an integral part of these financial statements.

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NOTES TO FINANCIAL STATEMENTS

Notes To Financial Statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Great Lakes Water Authority ("GLWA" or the "Authority") is the regional wholesale provider of water and sewer services in southeast Michigan. The Authority was incorporated by the counties of Macomb, Oakland, Wayne and the City of Detroit (the "City") on November 26, 2014 pursuant to Act 233, Public Acts of Michigan, 1955, as amended ("Act 233"). Pursuant to Leases that became effective on January 1, 2016, the Authority assumed possession and control of the regional assets of both the water supply and sewage disposal systems owned by the City, which were previously operated by the Detroit Water and Sewerage Department ("DWSD" or the "Department"). The City, acting through DWSD, will continue to manage and operate its own local retail water and sewer system infrastructure. The Leases assigned all revenues of both systems to the Authority for an initial term of 40 years and substituted GLWA for the City as the obligor on all outstanding debt obligations of the City related to the systems.

The Authority's water system is one of the largest in the United States, both in terms of water produced and population served. The water system currently serves an area of 1,760 square miles located in eight Michigan counties and an estimated population of approximately 3.8 million or approximately 38% of Michigan's population. Suburban wholesale customers comprise approximately 82% of the population served by the Authority, and the retail water customers comprise the remainder served by the Authority.

The Authority's sewer system is one of the largest in the United States, both in terms of treatment capacity and population served. The sewer system currently serves an area of 944 square miles located in three Michigan counties and an estimated population of approximately 2.8 million or approximately 28% of Michigan's population. Suburban customers comprise approximately 77% of the population served by the Authority, and the retail sewer customers comprise the remainder served by the Authority.

The Authority is authorized to establish rates, fees and charges for its water supply and sewage disposal services. Under the Water and Sewer Services Agreement, the City is appointed as agent of the Authority for setting retail rates and for billing, collecting and enforcing the collection of charges from retail water and sewer customers. As an agent of the Authority, the City, through the Board of Water Commissioners and without further approval by the City Council, is required to set retail rates to meet the revenue requirements for the City retail portion of the water and sewer systems. Under certain conditions, the Authority may terminate the City's appointment.

The financial statements of the Authority have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Authority's accounting policies are described below.

Reporting Entity

The GLWA Board is composed of six voting members. Two members are residents of the City of Detroit and are appointed by the Mayor of the City of Detroit. The chief executive of the counties of Macomb, Oakland and Wayne each appoint one member who is a resident of the county from which appointed and the Governor of the State of Michigan appoints one member who is a resident of an area served by the Authority outside of the counties. All members of the GLWA Board must have at least seven years of experience in a regulated industry, such as a utility, engineering, finance, accounting or law firm. After the initial term specified in its Articles of Incorporation, each GLWA Board member is appointed for a four-year term and serves at the pleasure of the appointing government.

The GLWA Board has adopted a committee structure. Four committees have been established: Audit, Capital Improvement Planning, Operations and Resources, and Legal.

The Authority has a water enterprise fund and a sewage disposal enterprise fund, both of which are presented as major funds.

Notes To Financial Statements

Basis of Accounting

The accounting policies of the Authority conform to GAAP as applicable to governmental entities. The accounts of the Authority are used to account for its activities, which are financed and operated in a manner similar to a private business enterprise. Accordingly, the Authority maintains its records on the accrual basis of accounting. Revenues from operations, investments and other sources are recorded when earned. Expenses (including depreciation) of providing services to the public are accrued when incurred.

Nonexchange transactions, in which the Authority receives value without directly giving equal value in return, include contributions and grants. On an accrual basis, revenue from contributions and grants is recognized in the fiscal year in which all eligibility requirements have been satisfied, including timing and expense requirements. Timing requirements specify the year when the resources are required to be used or the fiscal year when use is first permitted. Expense requirements specify the year in which the resources are provided to the Authority on a reimbursement basis.

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position

Cash Deposits and Investments

The Authority's cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with original maturities of three months or less from the date of acquisition.

Investments are stated at fair value. Short-term investments are reported at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments, and are discounted at prevailing interest rates for similar instruments. Investments that do not have established market values are reported at estimated fair value. Cash deposits are reported at carrying amounts, which reasonably approximates fair value.

State statutes authorize the Authority to deposit in the accounts of federally insured banks, credit unions and savings and loan associations and to invest in obligations of the U.S. Treasury, certain commercial paper, repurchase agreements, bankers' acceptances and mutual funds composed of otherwise legal investments. The Authority also maintains and adheres to a formal investment policy in accordance with Michigan Public Act 20 of 1943, *Investment of Surplus Funds of Political Subdivisions.*

Restricted Assets

Restricted assets are those assets set aside as required by the Authority's Master Bond Ordinance ("MBO"). See Note 4 for further details.

Unbilled Revenue

The Authority records unbilled revenues for services provided prior to year-end by accruing actual revenues billed in the subsequent month.

Contractual Obligation Receivable

Pursuant to the aforementioned Water and Sewer Services Agreement, the City is responsible for paying the portion of debt service on the bonds assumed by the Authority that were issued to finance the cost of improvements to the Detroit local facilities. Hence, the "receivable" recorded by the Authority on the "contractual obligation" of the City to the Authority. Any new debt issued on behalf of the City and DWSD is also included in the contractual obligation receivable.

Prepaid Items and other assets

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in the financial statements.

Inventories

Inventories consist of operating, maintenance and repair parts for sewage assets and are valued at the lower of cost or market, with cost being determined on an average cost method. Inventory is recorded as expense when consumed rather than when purchased. The water fund does not report inventory because the amounts are insignificant and for efficiency are recorded in the sewage disposal fund. Any inventory usage by the water fund is charged through an interfund payable to the sewage disposal fund.

Prepaid Lease

As described in Note 13, the Authority has recorded a prepaid lease for cash paid to DWSD on the date GLWA began operations equivalent to six months of lease payments. As noted in the 2018 Memorandum of Understanding (MOU), dated June 2018, this will be applied at the end of the 40 year term and, hence, it is classified as a noncurrent asset.

Capital Assets

Capital assets are recorded at historical cost, together with interest capitalized during construction. All acquisitions of land and land improvements are capitalized regardless of cost. The capitalization threshhold is $5,000 for capital assets with the exception of information technology which is $1 million dollars. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized. Major outlays for capital assets and improvements are capitalized as projects are constructed.

Capital assets acquired after January 1, 2016 are depreciated on the straight-line basis over the useful life of the assets as follows:

	Useful Lives (in years)
Site improvements	15
Buildings and structures	20-50
Infrastructure	80
Machinery and equipment	3-20
Vehicles	5-7
Leasehold improvements	15

Capital assets acquired as of the operational effective date of the Authority at January 1, 2016 are depreciated over their estimated remaining useful lives at that time as determined by a third-party valuation. These remaining lives differ from the years cited above for newly acquired capital assets and, in most instances, are significantly shorter.

Intangible Asset - Raw Water Rights

The Authority has recorded an intangible asset for raw water rights which is being amortized on a straight-line basis over 30 years. See Note 9 for a description of these rights.

Notes To Financial Statements

Deferred Outflows of Resources

In addition to assets, the statement of net position reports a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to future periods. At that time, the activity will be recognized as an outflow of resources (or expense). The Authority reports deferred outflows of resources for two items: deferred charges on refunding and pension amounts. Deferred charges on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred outflows of resources from pension amounts relate to the net pension liability. A portion of these costs represent contributions to the plan subsequent to the plan measurement date. More detailed information on pension amounts can be found in Note 16.

Long-term Obligations

In the financial statements, long-term debt and other long-term obligations are reported as liabilities in the statement of net position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount.

Obligation Payable

Under the terms of the lease agreements with the City, the Authority is required to pay a portion of the City's B and C notes allocated to the regional water and sewer systems. See "Obligation Payable - City of Detroit 2014 Financial Recovery Bonds" in Note 12.

Leases Payable

The effective date of the leases by the City to the Authority for the leased water and sewer facilities was January 1, 2016. See Note 14 for the details of the leases.

Lease Obligation - Raw Water Rights

The Authority has recorded a liability for the lease obligation on its raw water rights. See Note 15 for the details of this obligation.

Compensated Absences

The Authority has a paid time off (PTO) policy which has an annual accrual period ending September 30 each year. Employees are allowed to carry over a maximum bank of 80 hours to the next accrual period. Balances greater than 80 hours up to a maximum of 160 hours shall be converted to the retiree health saving program at 50% of the value of the PTO time. Hours in excess of 160 hours are forfeited if unused by September 30 of each accrual period. The accrued compensated absences for PTO accrual are approximately $1,743,000 for the water fund and $717,000 for the sewage disposal fund on June 30, 2018.

The Authority also has an accrued compensated absence liability assumed on January 1, 2016 relating to the accumulated unpaid vacation and sick leave balances for those employees who retired from the City or resigned from the City and accepted employment with the Authority on January 1, 2016. The June 30, 2018 balance of the accrued compensated absences for the liability assumed on January 1, 2016 is approximately $2,644,000 of which $469,000 is current. This liability is recorded in the water fund as the disbursements for payment will be processed from the water fund with reimbursement from the sewer fund. The accrued compensated absences includes the employers' share of Social Security and Medicare taxes.

Notes To Financial Statements

Bond Premiums, Discounts, and Deferred Amounts on Refunding

Bond premiums, discounts, and gains or losses on refunding are deferred and amortized over the life of the bonds. Bond premiums and discounts are amortized using the effective interest method, and deferred amounts on refunding are amortized using the straight-line method. Bonds payable are reported net of the applicable bond premium and discounts. Deferred amounts on refunding are reported as deferred outflows and deferred inflows of resources.

Deferred Inflows of Resources

In addition to liabilities, the statement of net position includes a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to future periods. At that time, the activity will be recognized as an inflow of resources (or revenues). The Authority has included the deferred amounts on swap terminations, deferred gain on refunding and pension inflows in this reporting category. The deferred amounts on swap terminations were assumed as part of the lease agreements with the City. The amounts will be fully amortized for both funds by fiscal 2036. Deferred gain on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred pension inflows result when there is a change in total pension liability due to benefit changes, differences between expected and actual experience, changes in actuarial assumptions, or differences between expected and actual investment returns. The amount for the changes in actuarial assumptions is deferred and amortized over the estimated remaining service life. The amount for the difference between actual and projected assumptions in investment earnings is deferred and amortized over five years.

Net Position

Net position, which represents the difference between assets, deferred outflows of resources, liabilities and deferred inflows of resources, is reported in three components as follows:

Net Investment in Capital Assets - consists of capital assets, net of accumulated depreciation and related debt.

Restricted – consists of amounts that are legally restricted by outside parties or by law through constitutional provisions or enabling legislation.

Unrestricted – is the residual balance of net position after *net investment in capital assets* and *restricted.*

When both restricted and unrestricted resources are available for use, generally it is the Authority's policy to use restricted resources first and then unrestricted resources when they are needed.

Classification of Revenues and Expenses

The Authority classifies its revenues and expenses as either operating or nonoperating.

Operating revenues are those revenues generated from providing services in connection with the Authority's principal ongoing operations. The principal operating revenues of the Authority are wholesale charges for providing water and wastewater treatment. The local system charges are the wholesale charges to the City of Detroit under the Water and Sewer Services Agreement. Wholesale customer charges are shown net of bad debt expense of $1,280,039 for the water fund and $2,452,769 for the sewage disposal fund.

Operating expenses include the costs of operating the water and sewer utilities, administrative expenses and depreciation on capital assets. Costs related to shared facilities and personnel are allocated to the water and sewer funds on a basis that relates costs incurred to the system benefited. By agreement, the Authority provides shared services to DWSD, which are shown as a reduction to operating expenses.

All revenue and expenses not meeting these definitions are reported as nonoperating revenues and expenses.

Notes To Financial Statements

Taxes

The Authority pays no direct federal, state or local taxes, except local taxes on excess property and federal Social Security and Medicare taxes.

Interest Income on Obligations Receivable

Interest income is the interest earned on the contractual obligation receivable.

Capital Contributions

Contributed capital, if any, represents the forgiveness of debt related to capital construction through the State of Michigan Revolving Loan Fund.

Centralized Services and Administrative Services

Various common costs incurred by the Authority are allocated between the water and sewer funds. The allocations are based on an annual cost allocation analysis and may change from year to year based upon that analysis. The following table shows the allocation of these common costs for the year ended June 30, 2018:

Common Costs	Water % Allocation	Water Allocation	Sewer % Allocation	Sewer Allocation	Total Common Costs
Centralized services	43.4%	$ 35,404,225	56.6%	$ 46,200,320	$ 81,604,545
Administrative services	42.9%	11,527,546	57.1%	15,332,770	26,860,316

Centralized services includes security, systems operations control, field engineering and service operations, facilities and fleet management, information technology, planning, asset management, energy management, and system analytics service costs.

Administrative services includes executive, public affairs, general counsel, organizational development, risk management, finance, procurement, and other service costs.

Use of Estimates

The preparation of basic financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the basic financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Reclassifications

Certain prior year amounts have been reclassified to conform with current year presentation.

Notes To Financial Statements

2. BUDGETARY INFORMATION

The financial activity of the Authority is presented in two enterprise funds, which are not required under State statutes to adopt appropriated budgets. Budget to actual schedules for revenues and expenses are presented in the other information section of this report. This schedule is not required by GAAP or subject to audit procedures. It is presented strictly for informational purposes.

Budget Process

GLWA adopts a two-year budget for the regional water and sewer systems as required by its Articles of Incorporation. The budgeted expenses shall equal the sum of the revenue requirement, including the following for both the regional water and sewer systems: a) operation and maintenance expenses; b) amounts necessary to pay the principal of and interest on all bonds and to restore any reserves therefor established in the Master Bond Ordinance; c) the lease payment, which shall be a common-to-all charge; d) GLWA portions of the net pension liability and the B&C obligation payable; e) the amount necessary to be deposited to the Water Residential Assistance Program (WRAP) Fund, which shall be a common-to-all charge equal to 0.5% of the base budgeted operating revenues for the regional water and sewer systems for each fiscal year; f) the amounts needed to make the required deposits to the regional Extraordinary Repair and Replacement Reserve Fund and the regional Improvement and Extension Fund as defined in the Master Bond Ordinance; and g) the amount necessary to satisfy the coverage ratios required by the rate covenant in the Master Bond Ordinance.

As provided in the leases, through the fiscal year ending June 30, 2025, the water and sewer systems are assumed to experience annual increases in the regional revenue requirement of not more than 4%. This limitation shall not be applicable, however, if the regional revenue requirement must increase beyond the 4% assumption in order to satisfy the rate covenant or to pay the cost of improvements to the leased water and/or sewer facilities that are required to be made by applicable laws.

In the leases, the City acknowledges that all local water and sewer system revenues received from customers in the City are the property of GLWA and will be deposited as received in the Receiving Fund as defined in the Master Bond Ordinance and applied as provided in the Bond Ordinance. As a result, the City agrees to provide the Authority with a budget for the local water and sewer system as provided in the Water and Sewer Services Agreement.

Schedule of Charges Process

The GLWA Wholesale Customer Model Water Contract requires that GLWA provide wholesale customers with written notice of a proposed charge, meet to review the proposed charge, and the underlying data used to calculate the charge not less than 30 calendar days prior to a public hearing. Further, the contract requires that a public hearing be held no less than 120 days prior to the date that a proposed charge increase is to take effect.

The Water and Sewer Services Agreement between GLWA and DWSD requires that GLWA provides the City with written notice of the proposed charge and the underlying data used to calculate the charge not less than 120 calendar days prior to the effective date of any new charge.

Notes To Financial Statements

3. CASH DEPOSITS AND INVESTMENTS

The deposits and investments of the Authority at June 30, 2018 are reported in the basic financial statements as follows:

	Water Fund	Sewage Disposal Fund	Total
Statement of Net Position			
Cash and cash equivalents	$ 310,085,221	$ 199,056,556	$ 509,141,777
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827
Investments	7,004,525	9,506,712	16,511,237
Restricted investments	1,234,954	31,790,386	33,025,340
Noncurrent restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059
Noncurrent restricted investments	150,436,225	143,261,763	293,697,988
Total	$ 546,538,800	$ 468,448,820	$ 1,014,987,620
Cash deposits and investments			
Bank deposits - checking and savings accounts	$ 54,724,497	$ 30,172,238	$ 84,896,735
Money market accounts	333,138,599	253,717,721	586,856,320
Investments in securities	158,675,704	184,558,861	343,234,565
Total	$ 546,538,800	$ 468,448,820	$ 1,014,987,620

Custodial Credit Risk - Deposits and Money Market Accounts. Deposits and money market accounts are exposed to custodial credit risk if they are not covered by depository insurance. At year-end, the carrying amount of the Authority's deposits and money market accounts was $387,863,096 for the water fund and $283,889,959 for the sewage disposal fund. The bank balance of the water fund deposits and money markets was $392,809,518 of which $349,684,515 was uninsured and uncollateralized. The bank balance of the sewage disposal fund deposits and money markets was $283,050,764 of which $260,963,021 was uninsured and uncollateralized.

In accordance with the Authority's investment policy and State law, all deposits are uncollateralized, held in the Authority's name, and evidenced by a safekeeping receipt. Also, due to the dollar amounts of cash deposits and the limits of FDIC insurance, the Authority believes it is impractical to insure all bank deposits. As a result, the Authority evaluates each financial institution and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Notes To Financial Statements

Custodial Credit Risk - Investments. Following is a summary of the Authority's investments as of June 30, 2018:

	Water Fund	Sewage Disposal Fund	Total
U.S. treasury notes	$ 73,964,522	$ 129,268,053	$ 203,232,575
U.S. government agencies	78,853,306	35,659,724	114,513,030
Commercial paper	5,857,876	19,631,084	25,488,960
Total	$ 158,675,704	$ 184,558,861	$ 343,234,565

Investments are exposed to custodial credit risk if the securities are uninsured, unregistered or held by a counterparty or its agent but not in the government's name. In accordance with the Authority's investment policy, all investments are held in the name of the Authority and are evidenced by a safekeeping receipt confirmation, and thus not exposed to custodial credit risk.

Credit Risk. Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Authority's investment policy and State law require that commercial paper be rated in the top two ratings by at least two nationally recognized statistical rating organizations.

As of June 30, 2018, all of the Authority's investments in securities of U.S. agencies were rated AA+ by Standard & Poor's and Aaa by Moody's. The Authority's commercial paper was rated A1 by Standard and Poor's and P1 by Moody's. U.S treasury notes are explicitly guaranteed by the U.S. government and not considered to have credit risk. The Authority's money market accounts were not rated.

Concentration of Credit Risk. Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. The Authority's investment policy requires diversification by security type and institution, but does not place a fixed percentage limit for any one issuer.

At June 30, 2018, the Authority had greater than 5% of its total investment portfolio concentrated as follows:

Investment Type	Issuer	% of Portfolio
Water fund		
U.S. government agencies	Federal Home Loan Bank	21.2%
U.S. government agencies	Federal National Mortgage Association	18.8%
U.S. government agencies	Federal Home Loan Mortgage Company	9.7%
Sewage disposal fund		
U.S. government agencies	Federal Home Loan Bank	5.6%
U.S. government agencies	Federal National Mortgage Association	8.1%
U.S. government agencies	Federal Home Loan Mortgage Company	5.6%

Notes To Financial Statements

Interest Rate Risk. Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of investments. The Authority's investment policy does not limit investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

As of June 30, 2018, the Authority's fixed income investments had the following maturities:

	< 1 year	1 - 5 years	Total
Water fund			
U.S. treasury notes	$ 55,374,505	$ 18,590,017	$ 73,964,522
U.S. government agencies	42,024,965	36,828,341	78,853,306
Commercial paper	5,857,876	-	5,857,876
	103,257,346	55,418,358	158,675,704
Sewage disposal fund			
U.S. treasury notes	98,858,779	30,409,274	129,268,053
U.S. government agencies	20,691,497	14,968,227	35,659,724
Commercial paper	19,631,084	-	19,631,084
	139,181,360	45,377,501	184,558,861
Total	$ 242,438,706	$ 100,795,859	$ 343,234,565

Fair Value Measurements - The Authority categorizes investments measured at fair value within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the assets. Level 1 inputs are quoted at prices in active markets for identical assets; Level 2 inputs are observable for the asset or liability, such as interest rates and yield curves observable at commonly quoted intervals; and Level 3 inputs are unobservable in the market and are the least reliable. The Authority had the following fair value measurements as of June 30, 2018:

	Level 1	Level 2	Total
Water fund			
Investments by fair value level:			
U.S. treasury notes	$ 73,964,522	$ -	$ 73,964,522
U.S. government agencies	-	78,853,306	78,853,306
Commercial paper	-	5,857,876	5,857,876
	73,964,522	84,711,182	158,675,704
Sewage disposal fund			
Investments by fair value level:			
U.S. treasury notes	129,268,053	-	129,268,053
U.S. government agencies	-	35,659,724	35,659,724
Commercial paper	-	19,631,084	19,631,084
	129,268,053	55,290,808	184,558,861
Total	$ 203,232,575	$ 140,001,990	$ 343,234,565

Notes To Financial Statements

4. RESTRICTED ASSETS

Restricted assets, comprised of cash and investments, are available for debt service on revenue bonds and to provide funds for improvements, enlargements, extensions and construction. In accordance with the provisions of the Master Bond Ordinance and Leases, the Authority follows a sequential flow of funds in segregated accounts through which revenue receipts are deposited and are maintained at certain levels in satisfaction of all legal requirements.

The following schedules provide, in the order of the flow of funds per the Master Bond Ordinance, the assignment of water and sewage disposal fund cash and investments between restricted and unrestricted assets based on the source of the monies as of June 30, 2018.

	Funded from Revenue		Funded from Debt Issuance	
	Unrestricted	Restricted	Restricted	Total
Water fund				
Receiving fund	$ 36,870,425	$ -	$ -	$ 36,870,425
Operations and maintenance	31,890,282	10,554,899	-	42,445,181
Senior lien debt service	-	25,596,861	-	25,596,861
Senior lien bond reserve	-	-	122,272,919	122,272,919
Second and junior lien debt service	-	15,994,996	-	15,994,996
Second and junior lien debt reserve	-	-	52,360,349	52,360,349
Pension obligation	-	185,543	-	185,543
Water residential assistance program (WRAP)	-	3,096,685	-	3,096,685
Budget stabilization	-	2,000,000	-	2,000,000
Extraordinary repair and replacement	27,520,400	-	-	27,520,400
Improvement and extension - regional	220,808,639	-	-	220,808,639
Subtotal - reserves defined by ordinance	317,089,746	57,428,984	174,633,268	549,151,998
Less: funded by surety (non-cash)	-	-	(153,663,433)	(153,663,433)
Total - reserves defined by Ordinance (net of surety coverage)	317,089,746	57,428,984	20,969,835	395,488,565
Cash held for the benefit of DWSD	-	8,418,827	-	8,418,827
Unspent construction bond proceeds	-	-	142,631,408	142,631,408
Total cash, cash equivalents and investments	317,089,746	65,847,811	163,601,243	546,538,800

Notes To Financial Statements

	Funded from Revenue		Funded from Debt Issuance	
	Unrestricted	Restricted	Restricted	Total
Sewage disposal fund				
Receiving fund	$ 24,905,202	$ -	$ -	$ 24,905,202
Operations and maintenance	77,177,762	8,024,414	-	85,202,176
Senior lien debt service	-	37,718,807	-	37,718,807
Senior lien bond reserve	-	-	143,404,305	143,404,305
Second and junior lien debt service	-	40,590,259	-	40,590,259
Second and junior lien debt reserve	-	-	71,643,990	71,643,990
Pension obligation	-	288,956	-	288,956
Water residential assistance program (WRAP)	-	3,812,436	-	3,812,436
Budget stabilization	-	5,000,000	-	5,000,000
Extraordinary repair and replacement	44,027,511	-	-	44,027,511
Improvement and extension - regional	62,452,793	-	-	62,452,793
Subtotal - reserves defined by ordinance	208,563,268	95,434,872	215,048,295	519,046,435
Less: funded by surety (non-cash)	-	-	(150,251,830)	(150,251,830)
Total - reserves defined by ordinance (net of surety coverage)	208,563,268	95,434,872	64,796,465	368,794,605
Unspent construction bond proceeds	-	-	99,654,215	99,654,215
Total cash, cash equivalents and investments	208,563,268	95,434,872	164,450,680	468,448,820
Total cash, cash equivalents and investments - business-type activities	$ 525,653,014	$ 161,282,683	$ 328,051,923	$ 1,014,987,620

Notes To Financial Statements

A reconciliation of restricted assets to restricted net position is as follows:

	Water Fund	Sewage Disposal Fund	Total Business-type Activities
Restricted assets from schedule above:			
From revenue	$ 65,847,811	$ 161,282,683	$ 227,130,494
From debt issuance	163,601,243	328,051,923	491,653,166
Amounts payable to liabilities	(63,015,256)	(281,522,813)	(344,538,069)
Restricted net position	$ 166,433,798	$ 207,811,793	$ 374,245,591
Restricted net position for:			
Debt service	23,239,368	101,996,536	$ 125,235,904
Capital acquisition	140,732,216	102,506,361	243,238,577
Payment assistance program	2,462,214	3,308,896	5,771,110
	$ 166,433,798	$ 207,811,793	$ 374,245,591

The following summary reconciles the above cash and investment balances with the balances per the Statement of Net Position. The allocation of restricted balances to current and noncurrent categories is not intended to directly align with the funding source allocation included in the schedule.

	Unrestricted	Restricted Current	Restricted Noncurrent	Total
Water fund				
Cash and cash equivalents	$ 310,085,221	$ 51,097,342	$ 18,261,706	$ 379,444,269
Cash held for the benefit of DWSD	-	8,418,827	-	8,418,827
Investments	7,004,525	1,234,954	150,436,225	158,675,704
	317,089,746	60,751,123	168,697,931	546,538,800
Sewage disposal fund				
Cash and cash equivalents	199,056,556	54,832,050	30,001,353	283,889,959
Investments	9,506,712	31,790,386	143,261,763	184,558,861
	208,563,268	86,622,436	173,263,116	468,448,820
Total	$ 525,653,014	$ 147,373,559	$ 341,961,047	$ 1,014,987,620

Surety coverage includes series specific policies; therefore, this represents the lesser of the maximum amount of the policy or amount of reserve requirement allocated to the specific series covered by such policy.

Notes To Financial Statements

5. DUE FROM OTHER GOVERNMENTS

Due from other governments, which consists entirely of amounts due from the City of Detroit, in the statement of net position are as follows:

	Water Fund	Sewage Disposal Fund
Billed shared services	$ 16,238,829	$ -
Unbilled shared services	6,836,377	-
Budgetary shortfall advance	-	18,468,427
Wayne County 2017 tax settlement	482,870	5,870,679
Accrued interest on obligation receivable	30,678	-
	$ 23,588,754	$ 24,339,106

6. LOAN RECEIVABLE - DWSD

Under the terms of the WSSA, dated June 12, 2015, and the 2018 MOU, dated June 27, 2018, if DWSD experiences a cumulative negative variance of more than two percent (2%) of the total budget for either local system (a "budget shortfall') from its budget adopted, DWSD, as the agent of GLWA, shall, within thirty (30) days thereafter, schedule a meeting of the Reconciliation Committee to discuss a remedy for the shortfall.

In accordance with the 2018 MOU, dated June 27, 2018, budget shortfalls not cured by the end of the fiscal year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge calculated as provided below, as part of the revenue requirement payable by DWSD. The surcharge factor on the portion of the budget shortfall for the sewage disposal fund which remains unpaid of $29,300,000 at June 30, 2018 shall be based on the three-year U.S. treasury note rate of 2.63%, plus 150 basis points for a total of 4.13%.

The balance of the loan receivable to be paid by DWSD is as follows:

Year Ended June 30,	Principal	Interest	Total
2019	$ 9,367,355	$ 1,032,800	$ 10,400,155
2020	9,761,148	639,000	10,400,148
2021	10,171,497	228,700	10,400,197
	$ 29,300,000	$ 1,900,500	$ 31,200,500

7. INTERFUND RECEIVABLES AND PAYABLES

Interfund balances result from the time lag between the dates interfund goods and services are provided or reimbursable expenditures occur and the payment between funds are made. Interfund balances for the year ended June 30, 2018 consisted of the following:

	Water Fund	Sewage Disposal Fund
Due to	$ 3,447,927	$ 330,293
Due from	330,293	3,447,927
Total	$ 3,778,220	$ 3,778,220

Notes To Financial Statements

8. CAPITAL ASSETS

Capital assets activity for the year ended June 30, 2018 was as follows:

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
Water fund					
Nondepreciable capital assets:					
Land	$ 34,166,736	$ -	$ -	$ -	$ 34,166,736
Easements	258,632,397	-	-	-	258,632,397
Construction in progress	159,386,541	36,598,938	-	(54,099,717)	141,885,762
Total nondepreciable assets	452,185,674	36,598,938	-	(54,099,717)	434,684,895
Depreciated capital assets:					
Site improvements	58,181,927	-	-	14,815,712	72,997,639
Buildings and structures	555,265,762	62,876	-	10,606,573	565,935,211
Infrastructure	586,432,994	-	-	21,601,352	608,034,346
Machinery and equipment	601,013,556	1,728,446	(1,169,618)	6,945,973	608,518,357
Vehicles	1,741,979	519,474	(57,019)	-	2,204,434
Leasehold improvements	-	142,876	-	130,107	272,983
Total depreciable assets	1,802,636,218	2,453,672	(1,226,637)	54,099,717	1,857,962,970
Less accumulated depreciation:					
Site improvements	(13,712,222)	(9,166,204)	-	-	(22,878,426)
Buildings and structures	(53,133,903)	(35,423,438)	-	-	(88,557,341)
Infrastructure	(56,599,277)	(37,736,981)	-	-	(94,336,258)
Machinery and equipment	(91,151,843)	(61,251,023)	447,601	-	(151,955,265)
Vehicles	(747,370)	(407,804)	44,552	-	(1,110,622)
Leasehold improvements	-	(6,365)	-	-	(6,365)
Total accumulated depreciation	(215,344,615)	(143,991,815)	492,153	-	(358,844,277)
Total capital assets being depreciated, net	1,587,291,603	(141,538,143)	(734,484)	54,099,717	1,499,118,693
Water fund net capital assets	2,039,477,277	(104,939,205)	(734,484)	-	1,933,803,588

Notes To Financial Statements

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
Sewage disposal fund					
Nondepreciable capital assets:					
Land	$ 28,733,333	$ -	$ -	$ 251,300	$ 28,984,633
Easements	96,211,323	-	-	-	96,211,323
Construction in progress	153,341,462	71,000,089	-	(78,175,407)	146,166,144
Total nondepreciable assets	278,286,118	71,000,089	-	(77,924,107)	271,362,100
Depreciated capital assets:					
Site improvements	36,278,911	-	-	2,305,901	38,584,812
Buildings and structures	1,077,473,004	248,710	-	55,639,989	1,133,361,703
Infrastructure	597,177,020	-	-	-	597,177,020
Machinery and equipment	1,149,389,092	2,676,212	(15,611)	18,732,247	1,170,781,940
Vehicles	2,025,964	364,562	(61,610)	-	2,328,916
Leasehold improvements	-	117,851	-	1,245,970	1,363,821
Total depreciable assets	2,862,343,991	3,407,335	(77,221)	77,924,107	2,943,598,212
Less accumulated depreciation:					
Site improvements	(10,193,024)	(6,796,166)	-	-	(16,989,190)
Buildings and structures	(79,843,471)	(53,485,133)	-	-	(133,328,604)
Infrastructure	(20,711,216)	(13,810,373)	-	-	(34,521,589)
Machinery and equipment	(159,722,384)	(112,681,684)	9,482	-	(272,394,586)
Vehicles	(850,454)	(469,621)	61,610	-	(1,258,465)
Leasehold improvements	-	(7,606)	-	-	(7,606)
Total accumulated depreciation	(271,320,549)	(187,250,583)	71,092	-	(458,500,040)
Total capital assets being depreciated, net	2,591,023,442	(183,843,248)	(6,129)	77,924,107	2,485,098,172
Sewage disposal fund net capital assets	2,869,309,560	(112,843,159)	(6,129)	-	2,756,460,272
Business-type activities capital assets, net	$ 4,908,786,837	$ (217,782,364)	$ (740,613)	$ -	$ 4,690,263,860

Capital assets were evaluated during the year to determine if any asset impairments exist, defined as a significant, unexpected decline in the service utility of a capital asset. The Authority did not have any significant impairments for the year.

9. INTANGIBLE ASSET

Raw Water Rights Asset

Effective December 1, 2017, the Authority, the City of Flint, Karegnondi Water Authority (KWA), Genesee County Drain Commission (GCDC) and State of Michigan entered into a long-term partnership agreement to satisfy a number of critical water service needs across the region. Key provisions of a master agreement includes: 1) a 30-year water service contract with the City of Flint that establishes the Authority as the long-term water source for the City of Flint and credits the City of Flint for its debt service payment obligations on existing KWA bonds for the building of its raw water intake and supply line; 2) a long-term lease to the Authority of the 72-inch line serving the City of Flint; and 3) a 30-year contract for reciprocal, emergency water services between the Authority and GCDC.

Notes To Financial Statements

The 30-year water service contract with the City of Flint includes a license to raw water rights on 17.46 MGD of the 18 MGD purchased by Flint as part of KWA bond obligation. These license rights constitute an intangible asset under governmental accounting standards. Therefore, the Authority has recorded an intangible asset and purchase obligation liability of approximately $107 million associated with this agreement in the accompanying financial statements. The Authority is amortizing the intangible asset over 30 years. As the City of Flint satisfies its monthly bond payment obligations to KWA, the Authority credits Flint's water invoice for that payment and reduces the Authority's purchase obligation. This process will continue each year over the 30-year life of the asset.

Intangible asset activity for the year ended June 30, 2018 was as follows:

	Beginning Balance	Additions	Disposals	Ending Balance
Water fund				
Intangible asset - raw water rights	$ -	$ 106,999,919	$ -	$ 106,999,919
Accumulated amortization	-	(2,080,554)	-	(2,080,554)
Total intangible asset	$ -	$ 104,919,365	$ -	$ 104,919,365

10. OTHER ACCRUED LIABILITIES

Other accrued liabilities in the statement of net position are as follows:

	Water Fund	Sewage Disposal Fund
Cash held for the benefit of DWSD	$ 8,923,677	$ -
Customer deposit	3,756,015	-
	$ 12,679,692	$ -

11. DUE TO OTHER GOVERNMENTS

Due to other governments, which consists entirely of amounts due to the City of Detroit, in the statement of net position is as follows:

	Water Fund	Sewage Disposal Fund
Shared services	$ 11,935,868	$ -
2018 MOU - inspection fees	-	47,539
	$ 11,935,868	$ 47,539

Notes To Financial Statements

12. LONG-TERM DEBT

Changes in long-term debt and accrued compensated absences for the year ended June 30, 2018 were as follows:

	Beginning Balance	Increase	Decrease	Debt Forgiveness	Ending Balance	Due Within One Year
Water fund						
Revenue bonds	$2,340,885,000	$ -	$ (56,060,000)	$ -	$2,284,825,000	$ 2,785,000
State revolving loans	17,252,235	12,533,446	(1,435,000)	(2,914,779)	25,435,902	1,775,000
Total installment debt	2,358,137,235	12,533,446	(57,495,000)	(2,914,779)	2,310,260,902	4,560,000
Deferred amounts for:						
Unamortized premiums	287,690,320	-	(19,117,333)	-	268,572,987	18,195,511
Unamortized discounts	(15,968,219)	-	3,233,428	-	(12,734,791)	(2,185,668)
Total debt, net	2,629,859,336	12,533,446	(73,378,905)	(2,914,779)	2,566,099,098	20,569,843
Compensated absences	4,446,013	3,866,359	(3,925,540)	-	4,386,832	2,212,326
Total water fund	2,634,305,349	16,399,805	(77,304,445)	(2,914,779)	2,570,485,930	22,782,169
Sewage disposal fund						
Revenue bonds	2,636,510,000	-	(52,445,000)	-	2,584,065,000	7,555,000
Capital appreciation bonds	22,815,000	-	(5,565,000)	-	17,250,000	2,470,000
State revolving loans	485,267,036	34,750,504	(44,340,000)	-	475,677,540	45,915,000
Total installment debt	3,144,592,036	34,750,504	(102,350,000)	-	3,076,992,540	55,940,000
Discount on capital appreciation bonds	(3,313,263)	-	1,047,305	-	(2,265,958)	(863,930)
Deferred amounts for:						
Unamortized premiums	272,803,640	-	(17,944,003)	-	254,859,637	17,199,177
Unamortized discounts	(112,145,376)	-	12,311,392	-	(99,833,984)	(11,089,040)
Total debt, net	3,301,937,037	34,750,504	(106,935,306)	-	3,229,752,235	61,186,207
Compensated absences	679,260	488,748	(450,922)	-	717,086	717,086
Total sewage disposal fund	3,302,616,297	35,239,252	(107,386,228)	-	3,230,469,321	61,903,293
Total business-type activities	$5,936,921,646	$ 51,639,057	$ (184,690,673)	$ (2,914,779)	$5,800,955,251	$ 84,685,462

Notes To Financial Statements

As of June 30, 2018, aggregate debt service requirements of the Authority's debt (fixed and variable-rate) instruments were as follows. These amounts assume that current interest rates on variable-rate bonds will remain the same for their respective terms. As these rates vary, interest payments on variable-rate bonds will vary.

	Year Ended June 30,	Principal	Interest	Total
Water fund				
	2019	$ 4,560,000	$ 95,567,148	$ 100,127,148
	2020	54,935,000	114,381,116	169,316,116
	2021	63,850,000	111,465,843	175,315,843
	2022	71,220,000	108,039,437	179,259,437
	2023	71,040,000	104,427,547	175,467,547
	2024-2028	434,717,820	459,796,626	894,514,446
	2029-2033	548,020,941	337,071,223	885,092,164
	2034-2038	550,225,000	192,521,143	742,746,143
	2039-2043	305,450,000	89,580,836	395,030,836
	2044-2048	206,242,141	21,240,304	227,482,445
		$2,310,260,902	$1,634,091,223	$ 3,944,352,125
Sewage disposal fund				
	2019	$ 55,940,000	$ 110,187,959	$ 166,127,959
	2020	108,155,000	132,399,241	240,554,241
	2021	113,580,000	128,371,601	241,951,601
	2022	112,450,000	124,259,188	236,709,188
	2023	122,879,430	119,734,928	242,614,358
	2024-2028	643,823,758	519,019,867	1,162,843,625
	2029-2033	746,374,048	370,842,380	1,117,216,428
	2034-2038	791,455,304	192,377,557	983,832,861
	2039-2043	317,830,000	43,526,669	361,356,669
	2044-2045	64,505,000	3,259,375	67,764,375
		$3,076,992,540	$1,743,978,765	$ 4,820,971,305

For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository account five business days prior to the actual due date of the bond principal and interest payments. Therefore, the payments for principal and interest due on July 1, 2018 are not included in the debt service requirements amounts above as they were paid on June 25, 2018.

Notes To Financial Statements

Revenue and Capital Appreciation Bonds Payable

Net revenues of the Authority are pledged to repayment of bonds; following are the revenue bonds payable at June 30, 2018:

Issue	Bond Date	Original Issue Amount	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Water fund						
Series 2001C	5/14/08	$ 4,055,000	4.25%	7/01/18	$ 415,000	
Series 2001C	5/14/08	186,350,000	4.50-5.75%	7/01/19–29	178,735,000	c
Series 2003A	1/30/03	234,805,000	5.00%	7/01/34	100,000	c
Series 2003B	1/30/03	172,945,000	5.00%	7/01/34	100,000	c
Series 2005B	5/14/08	19,070,000	5.50%	7/01/18	1,770,000	
Series 2005B	5/14/08	175,830,000	5.25%	7/01/35	100,000	c
Series 2006A	8/16/06	237,205,000	5.00%	7/01/34	100,000	c
Series 2006B	4/01/09	900,000	4.80-5.00%	7/01/18–19	200,000	
Series 2006B	4/01/09	119,100,000	6.25%	7/01/36	100,000	c
Series 2011A	12/22/11	37,880,000	5.00%	7/01/19-20	4,365,000	
Series 2011A	12/22/11	341,710,000	5.00-5.75%	7/01/27–41	289,605,000	c
Series 2011B	12/22/11	7,455,000	5.00%	7/01/18–21	2,155,000	
Series 2011B	12/22/11	9,740,000	6.00%	7/01/22-33	2,295,000	c
Series 2011C	12/22/11	3,925,000	5.00%	7/01/21	1,020,000	
Series 2011C	12/22/11	99,965,000	4.50-5.25%	7/01/23–41	74,125,000	c
Series 2014D-1	9/04/14	162,350,000	5.00%	7/01/19–23	145,685,000	
Series 2014D-1	9/04/14	44,190,000	5.00%	7/01/35–37	44,190,000	c
Series 2014D-2	9/04/14	51,530,000	5.00%	7/01/23-24	51,530,000	
Series 2014D-2	9/04/14	136,925,000	5.00%	7/01/25–28	136,925,000	c
Series 2014D-3	9/04/14	62,700,000	5.00%	7/01/19–20	23,290,000	
Series 2014D-4	9/04/14	209,360,000	5.00%	7/01/29–34	209,360,000	c
Series 2014D-5	9/04/14	9,270,000	2.85%	7/01/19	9,270,000	
Series 2014D-6	9/04/14	21,735,000	5.00%	7/01/19–24	21,735,000	
Series 2014D-6	9/04/14	43,690,000	5.00%	7/01/25–36	43,690,000	c
Series 2015D-1	12/15/15	20,155,000	5.00%	7/01/19-22	19,650,000	
Series 2015D-1	12/15/15	69,275,000	5.00%	7/01/27-35	69,275,000	c
Series 2015D-2	12/15/15	37,235,000	5.00%	7/01/34	37,235,000	c
Series 2016A	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016A	10/27/16	87,970,000	5.00%	7/01/27-46	87,970,000	c
Series 2016B	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016B	10/27/16	163,800,000	5.00%	7/01/27-46	163,800,000	c
Series 2016C	10/27/16	76,245,000	5.00%	7/01/22-26	76,245,000	
Series 2016C	10/27/16	367,685,000	5.00-5.25%	7/01/27-35	367,685,000	c
Series 2016D	10/27/16	4,665,000	5.00%	7/01/24-26	4,665,000	
Series 2016D	10/27/16	217,380,000	4.00-5.00%	7/01/27-36	217,380,000	c
Total water fund revenue bonds payable					2,284,825,000	

Notes To Financial Statements

Issue	Bond Date	Original Issue Amount	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Sewage disposal fund						
Series 1998A	12/14/06	$ 49,075,000	5.50%	7/01/18–23	$ 18,485,000	c
Series 1998B	12/14/06	48,770,000	5.25%	7/01/20–23	18,260,000	c
Series 1999A **	12/01/99	33,510,118	—	7/01/18–21	14,984,042	
Series 2001B	9/15/01	110,550,000	5.50%	7/01/23–29	78,895,000	
Series 2001C-1	6/17/09	6,360,000	5.25%	7/01/18–19	810,000	
Series 2001C-1	6/17/09	148,510,000	6.50–7.00%	7/01/20–27	40,705,000	c
Series 2001C-2	5/08/08	3,275,000	4.00%	7/01/18	380,000	
Series 2001C-2	5/08/08	119,630,000	4.00–5.25%	7/01/19–29	107,045,000	c
Series 2003A	5/15/03	213,395,000	5.50%	7/01/18	415,000	
Series 2003B	6/17/09	150,000,000	7.50%	7/1/33	100,000	c
Series 2004A	2/12/04	101,435,000	5.25%	7/01/19–24	35,010,000	
Series 2005A	3/17/05	237,805,000	4.50%	7/1/35	100,000	c
Series 2005A	3/17/05	31,785,000	5.00%	7/01/34-35	31,785,000	c
Series 2005B	3/17/05	40,215,000	5.50%	7/01/21-22	17,115,000	
Series 2005C	4/05/05	41,095,000	5.00%	7/1/25	100,000	c
Series 2006B	8/10/06	183,150,000	5.00%	7/1/36	100,000	c
Series 2006B	8/10/06	55,000,000	5.00%	7/01/34-36	55,000,000	c
Series 2006D	12/14/06	370,000,000	Variable (*)	7/01/26-32	239,475,000	c
Series 2012A	6/26/12	95,445,000	5.00%	7/01/18–22	62,115,000	
Series 2012A	6/26/12	564,335,000	5.00–5.50 %	7/01/23–39	462,810,000	c
Series 2014C-1	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014C-1	9/04/14	123,200,000	5.00%	7/01/23-44	123,200,000	c
Series 2014C-2	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014C-2	9/04/14	27,450,000	5.00%	7/01/23-44	27,450,000	c
Series 2014C-3	9/04/14	142,600,000	5.00%	7/01/21–24	142,600,000	
Series 2014C-3	9/04/14	303,570,000	5.00%	7/01/25–33	303,570,000	c
Series 2014C-5	9/04/14	95,165,000	5.00%	7/01/18–20	34,430,000	
Series 2014C-6	9/04/14	88,900,000	5.00%	7/01/32–33	88,900,000	c
Series 2014C-7	9/04/14	32,650,000	5.00%	7/01/19–24	32,650,000	
Series 2014C-7	9/04/14	44,065,000	5.00%	7/01/25–36	44,065,000	c
Series 2015C	12/15/15	197,160,000	5.00%	7/01/26-35	197,160,000	c
Series 2016B	10/27/16	14,445,000	5.00%	7/01/24-26	14,445,000	
Series 2016B	10/27/16	111,660,000	5.00%	7/01/27-34	111,660,000	c
Series 2016C	10/27/16	295,190,000	4.00–5.00%	7/01/27-36	295,190,000	c
Total sewage disposal fund revenue and capital appreciation bonds payable					2,599,049,042	
Total business-type activities					$4,883,874,042	

Maturity dates reflect the final pricing of each series of bonds. Multiple maturity date ranges for a series of bonds differentiate between those bonds which are callable prior to maturity and those which are not callable prior to maturity.

* Interest rates are reset periodically at the stated current market interest rate.

** Bonds are capital appreciation bonds. The outstanding balance represents the discounted present value.

c Indicates bonds are callable under terms specified in the indenture; all other bonds are noncallable.

Notes To Financial Statements

Revenue Bonds - Pledges of Future Revenue

The Authority has pledged assets to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The water system bonds and loans are paid solely from the net revenues of the water system and the sewer system bonds and loans are paid solely from the net revenues of the sewer system. Net revenues are defined in the Authority's Water and Sewer Master Bond Ordinances as all revenues except those transferred to the operation and maintenance funds. These revenues are further defined to includes the revenues from the retail customers who are serviced under the Water and Sewer Services Agreement with the City which are reported in the financial statements of DWSD. The pledged revenues calculation for the fiscal year ending June 30, 2018 includes revenues reported by the Authority and DWSD as this revenue is pledged for payment of the bonds and loans of the Authority.

The general purpose of the Water System debt is to provide funding for various water treatment and transmission capital improvements, refund certain water revenue bonds, pay termination amounts for interest rate swap agreements and fund reserve requirements. The general purpose of the Sewer System bonds is to provide funding for various wastewater treatment and collection activities, capital improvements, refund certain sewage disposal revenue bonds, pay termination amounts for interest rate swap agreements and fund reserve requirements. The term of pledge commitment for the water bonds is through 2047 and through 2045 for the sewer bonds.

See table below for pledged revenue requirements as of June 30, 2018:

	Water Fund	Sewage Disposal Fund
Remaining principal and interest requirement	$ 3,944,352,125	$4,820,971,304
Principal and interest funding requirement for the year ending June 30, 2018 (Computed consistent with rate covenant basis for rate determination purposes. Not applicable for purposes of additional bond test.)	$ 172,549,891	$ 232,491,813
Pledged revenue for the year ending June 30, 2018	$ 259,822,627	$ 299,055,461
Pledged revenue collected as a percentage of funding requirement	150.6%	124.1%
Amount in restricted cash and investments related to various bond indentures at June 30, 2018	$ 142,631,408	$ 99,654,215

Notes To Financial Statements

State Revolving Loans Payable

Net revenues of the Authority are pledged to repayment of bonds. The following is a schedule of the state revolving loans payable at June 30, 2018:

Issue	Bond Date	Amount Issued	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance
Water fund					
Series 2005 SRF-1	9/22/05	$ 13,805,164	2.125%	10/01/18-26	$ 6,710,164
Series 2005 SRF-2	9/22/05	8,891,730	2.125%	10/01/18-26	4,221,730
Series 2006 SRF-1	9/21/06	5,180,926	2.125%	10/01/18-26	2,495,926
Series 2008 SRF-1	9/29/08	2,590,941	2.500%	10/01/18-28	1,120,941
Series 2016 SRF-1	9/16/16	9,605,000	2.500%	4/01/19-48	7,533,598
Series 2016 SRF-2	9/16/16	4,180,000	2.500%	4/01/19-28	3,353,543
Total water fund state revolving loans payable					25,435,902
Sewage disposal fund					
Series 1997B SRF	9/30/97	5,430,174	2.25%	10/01/18	330,000
Series 1999 SRF-1	6/24/99	21,475,000	2.50%	4/01/19-20	2,650,000
Series 1999 SRF-2	9/30/99	46,000,000	2.50%	10/01/18-22	13,735,000
Series 1999 SRF-3	9/30/99	31,030,000	2.50%	10/01/18-20	5,700,000
Series 1999 SRF-4	9/30/99	40,655,000	2.50%	10/01/18-20	7,465,000
Series 2000 SRF-1	3/30/00	44,197,995	2.50%	10/01/18-22	11,947,995
Series 2000 SRF-2	9/28/00	64,401,066	2.50%	10/01/18-22	19,141,066
Series 2001 SRF-1	6/28/01	82,200,000	2.50%	10/01/18-24	33,535,000
Series 2001-SRF-2	12/20/01	59,850,000	2.50%	10/01/18-24	24,420,000
Series 2002 SRF-1	6/27/02	18,985,000	2.50%	4/01/19-23	5,660,000
Series 2002 SRF-2	6/27/02	1,545,369	2.50%	4/01/19-23	460,369
Series 2002 SRF-3	12/19/02	31,549,466	2.50%	10/01/18-24	11,864,466
Series-2003 SRF-1	6/26/03	48,520,000	2.50%	10/01/18-25	22,350,000
Series 2003 SRF-2	9/25/03	25,055,370	2.50%	4/01/18-25	10,150,370
Series-2004 SRF-1	6/24/04	2,910,000	2.125%	10/01/18-24	1,160,000
Series 2004 SRF-2	6/24/04	18,353,459	2.125%	4/01/19-25	7,298,459
Series 2004 SRF-3	6/24/04	12,722,575	2.125%	4/01/19-25	5,042,575
Series 2007 SRF-1	9/20/07	167,540,598	1.625%	10/01/18-29	106,940,598
Series 2009 SRF-1	4/17/09	13,970,062	2.50%	4/01/19-30	8,910,062
Series 2010 SRF-1	1/22/10	4,214,763	2.50%	4/01/19-31	2,925,763
Series 2012 SRF-1	8/30/12	14,950,000	2.50%	10/01/18-34	13,150,000
Series 2015A SRF	3/20/15	79,500,000	2.50%	4/01/19-36	73,200,000
Series 2015B SRF	3/20/15	27,175,304	2.50%	10/01/18-35	24,565,304
Series 2015D SRF	12/11/15	19,485,000	2.50%	10/01/18-35	13,781,478
Series 2016 SRF-1	9/16/16	19,305,000	2.50%	4/01/19-38	9,051,147
Series 2016 SRF-2	9/16/16	51,310,000	2.50%	4/01/20-39	19,153,758
Series 2016 SAW-1	5/25/16	10,000,000	2.50%	10/01/19-38	10,000,000
Series 2017 SRF-1	6/23/17	38,450,000	2.50%	10/01/19-38	11,089,130
Total sewage disposal fund state revolving loans payable					475,677,540
Total business-type activities					$ 501,113,442

The state revolving loans are issued as part of the State of Michigan's Revolving Fund Loan Program. As GLWA draws additional amounts from time to time hereafter, the outstanding principal amounts of such bonds will correspondingly increase. All loans are callable under terms specified in the loan agreements.

Notes To Financial Statements

Refunded Debt - Water Fund

In prior years, the Authority's water fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts for the purpose of generating resources for all future debt service payments on the refunded debt. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. At June 30, 2018, the balance of the bonds considered to be defeased are $147,985,000 for Series 2005B revenue bonds and $85,250,000 for Series 2006B revenue bonds.

Refunded Debt - Sewage Disposal Fund

In prior years, the Authority's sewage disposal fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts for the purpose of generating resources for all future debt service payments on the refunded debt. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. At June 30, 2018, the balance of the bonds considered to be defeased are $25,550,000 for Series 2003B revenue bonds, $134,745,000 for Series 2001E revenue bonds and $123,185,000 for Series 2006A revenue bonds.

Issuance of State Revolving Loans

The Authority's water fund received loans from the State of Michigan Revolving Loan Fund totaling $12,533,446 of which $2,914,779 has been forgiven, and the sewage disposal fund received $34,750,504 during the year ended June 30, 2018. The proceeds of the sewage disposal fund loans were used to pay costs of acquiring, constructing extensions, and making certain repairs and improvements to the regional sewer system. The water fund loans were for DWSD, the subrecipient of the loans. At June 30, 2018, $9,572,859 for the water fund and $73,934,487 for the sewage disposal fund was authorized and unissued.

Debt Ratings

As of September 30, 2016, Standard & Poor's Ratings Services ratings on the senior and second lien debt was A-/BBB+; Moody's rating was A3/Baa1 and Fitch's rating was A/A-. See note 20 for rating agency upgrades received in September 2018.

Contractual Obligation Receivable - Debt Allocation for DWSD Retail Operations

As part of the lease transaction in which GLWA leased the regional water and sewer system from the City of Detroit, all DWSD revenue bonds outstanding as of December 31, 2015, including those purchased by the Michigan Finance Authority under its state revolving loan program, were assumed by GLWA with the consent of bondholders. Total bonds assumed by GLWA totaled $2,313,683,761 for the water fund and $3,291,282,050 for the sewage disposal fund.

Per the Water and Sewer Services Agreement between DWSD and GLWA dated June 12, 2015 and the Master Bond Ordinance dated October 7, 2015, as amended, the Detroit retail class continues to pay its common-to-all share of debt service revenue requirements and its allocated share of debt service revenue requirements associated with improvements to the local water and sewer systems. Payments on the debt service incurred by GLWA on the outstanding revenue bonds assumed as of December 31, 2015 are to be allocated using an agreed-upon percentage of total debt service associated with bond-financed local improvements over the life of such bonds, though the bonds themselves continue to be secured by the net revenue of GLWA, and the revenues of the Detroit retail class. The Memorandum of Understanding (MOU) dated June 27, 2018 defines an agreed upon allocation and amortization schedule. The total obligation receivable at June 30, 2018 is $490,599,529 for the water fund and $346,828,300 for the sewage disposal fund.

Notes To Financial Statements

Obligation Payable - City of Detroit 2014 Financial Recovery Bonds

The Financial Recovery Bonds, Series 2014-B are federally taxable. The Series 2014-B bonds have two components: B(1) which has a 4.0 percent per annum interest rate and B(2) which has a variable interest rate until the maturity date of April 1, 2044. The bonds were delivered to classes of creditors in satisfaction of: (1) Class 12 OPEB claims the bonds were distributed to the new Voluntary Employee Beneficiary Associations (VEBA) for the general retirees and police and fire retirees; (2) Class 9 Pension Obligation Certificate (POC) claims; and (3) other unsecured bankruptcy claims. GLWA has a contractual obligation to pay a portion of the bonds based on an agreed-upon allocation percentage.

The Financial Recovery Bonds, Series 2014-C bear interest at 5.0 percent per annum. The bonds mature on December 10, 2026. The 2014-C bonds were issued as part of the Syncora Settlement and FGIC/POC Settlement in the bankruptcy plan. GLWA has a contractual obligation to pay a portion of the bonds based on an agreed-upon allocation percentage.

In 2018, the governing body of the City of Detroit authorized the use of general funds for the full redemption of the General Obligation Bonds, 2014 Series C, including the amount allocated to the Authority. The 2014 Series C debt was fully redeemed on April 13, 2018. The Authority will repay the City of Detroit General Fund under the terms of the original debt payment schedule for the General Obligation Bonds, 2014 Series C, including interest of 5 percent per year, with principal and interest due on June 30 each year, and a final payment in fiscal year 2027.

The following is a schedule of the obligation payable for the Financial Recovery Bonds at June 30, 2018:

	Bond Issue	Original Issue Amount	Range of Interest Rates	Maturity Date	Outstanding Ending Balance
Water fund					
	Series 2014-B	$ 26,540,080	4.00% and variable	4/1/44	$ 15,556,024
	Series 2014-C	3,829,794	5.00%	12/10/26	1,709,479
	Total water fund				17,265,503
Sewage disposal fund					
	Series 2014-B	44,233,463	4.00% and variable	4/1/44	34,990,439
	Series 2014-C	6,382,990	5.00%	12/10/26	3,845,158
	Total sewage disposal fund				38,835,597
Total business-type activities					$ 56,101,100

Notes To Financial Statements

As of June 30, 2018, debt service requirements of the Financial Recovery Bonds were as follows:

Year Ended June 30,	Principal	Interest	Total
Water fund			
2019	$ 167,794	$ 707,715	$ 875,509
2020	176,183	699,325	875,508
2021	184,992	690,516	875,508
2022	194,242	681,267	875,509
2023	203,954	671,555	875,509
2024-2028	3,893,520	3,011,604	6,905,124
2029-2033	3,889,006	2,177,843	6,066,849
2034-2038	3,889,006	1,928,947	5,817,953
2039-2043	3,889,006	933,361	4,822,367
2044	777,800	46,668	824,468
	17,265,503	11,548,801	28,814,304

Year Ended June 30,	Principal	Interest	Total
Sewage disposal fund			
2019	$ 377,419	$ 1,591,876	$ 1,969,295
2020	396,291	1,573,005	1,969,296
2021	416,106	1,553,190	1,969,296
2022	436,911	1,532,385	1,969,296
2023	458,757	1,510,539	1,969,296
2024-2028	8,757,762	6,774,054	15,531,816
2029-2033	8,747,610	4,898,661	13,646,271
2034-2038	8,747,610	4,338,814	13,086,424
2039-2043	8,747,609	2,099,426	10,847,035
2044	1,749,522	104,972	1,854,494
	38,835,597	25,976,922	64,812,519
Total business-type activities	$ 56,101,100	$ 37,525,723	$ 93,626,823

Interest expense

The following represents the amounts recorded as interest expense for the year ended June 30, 2018:

	Water Fund	Sewage Disposal Fund	Total
Bonded debt	$ 118,248,715	$ 137,619,732	$ 255,868,447
Obligation payable	709,737	1,596,417	2,306,154
Lease payable	17,865,778	21,835,953	39,701,731
Raw water rights	2,518,974	-	2,518,974
	$ 139,343,204	$ 161,052,102	$ 300,395,306

Notes To Financial Statements

13. NET INVESTMENT IN CAPITAL ASSETS

The composition of net investment in capital assets as of June 30, 2018, was as follows:

	Water Fund	Sewage Disposal Fund	Total Business-type Activities
Capital assets and contractual obligation receivable:			
Capital assets not being depreciated	$ 434,684,895	$ 271,362,100	$ 706,046,995
Capital assets being depreciated, net	1,499,118,693	2,485,098,172	3,984,216,865
Obligation receivable	490,599,529	346,828,300	837,427,829
	2,424,403,117	3,103,288,572	5,527,691,689
Related debt:			
Revenue bonds	2,284,825,000	2,584,065,000	4,868,890,000
Less: current debt that was used for swaps	(167,396,566)	(276,710,258)	(444,106,824)
Capital appreciation bonds	-	17,250,000	17,250,000
State revolving loans	25,435,902	475,677,540	501,113,442
Discount on capital appreciation bonds	-	(2,265,958)	(2,265,958)
Bond premium	268,572,987	254,859,637	523,432,624
Bond discount	(12,734,791)	(99,833,984)	(112,568,775)
Deferred charge on refunding	(94,431,823)	(186,544,140)	(280,975,963)
Deferred gain on refunding	59,252,431	46,654,836	105,907,267
Deferred amounts for swap terminations	80,342	189,808	270,150
	2,363,603,482	2,813,342,481	5,176,945,963
Net investment in capital assets	$ 60,799,635	$ 289,946,091	$ 350,745,726

Notes To Financial Statements

14. LONG-TERM LEASES PAYABLE AND RELATED PREPAID

On January 1, 2016, the Authority effectuated lease agreements with the City for the regional water and sewer systems for a term of 40 years, to be extended automatically to coincide with the final maturity of any bonds issued to finance improvements to the regional or local sewer systems. The agreements collectively provide for an annual lease payment of $50 million. Currently, $22,500,000 is allocated to the water fund and $27,500,000 is allocated to the sewage disposal fund. The lease for the water system provides service to the wholesale customers and the retail water customers of the City up to the point of connection to the local water system facilities of the City. The lease for the sewer system provides service to the wholesale customers and the retail sewer customers of the City up to the point of connection to the local sewer system facilities of the City. In addition, both leases provide that certain other assets including cash and investments held by DWSD as of December 31, 2015 be transferred to GLWA, all revenues of the regional and local water and sewer systems are assigned to GLWA, and that GLWA assumes all DWSD bonded debt and certain other liabilities. The long-term leases are recorded as the present value of all future debt payments.

Amounts reported as a liability at year-end represent the net present value of all future lease payments. Changes in long-term leases payable for the year ended June 30, 2018 were as follows:

	Beginning Balance	Increase	Decrease	Ending Balance	Amount Due Within One Year *
Water fund	$ 430,921,520	$ -	$ (4,618,173)	$ 426,303,347	$ 4,814,476
Sewage disposal fund	526,681,859	-	(5,644,436)	521,037,423	5,884,359
Total business-type activities	$ 957,603,379	$ -	$ (10,262,609)	$ 947,340,770	$ 10,698,835

* The current portion of the long-term leases payable represents the 12 monthly payments required from July 1, 2018 through June 30, 2019. Future revenues are intended to cover these payments.

Notes To Financial Statements

As of June 30, 2018, aggregate requirements of the Authority's leases were as follows:

	Year Ended June 30,	Principal	Interest	Total
Water fund				
	2019	$ 4,814,476	$ 17,685,524	$ 22,500,000
	2020	5,019,121	17,480,879	22,500,000
	2021	5,232,465	17,267,535	22,500,000
	2022	5,454,878	17,045,122	22,500,000
	2023	5,686,745	16,813,255	22,500,000
	2024-2028	32,271,718	80,228,282	112,500,000
	2029-2033	39,738,870	72,761,130	112,500,000
	2034-2038	48,933,801	63,566,199	112,500,000
	2039-2043	60,256,289	52,243,711	112,500,000
	2044-2048	74,198,617	38,301,383	112,500,000
	2049-2053	91,366,974	21,133,026	112,500,000
	2054-2057	53,329,393	2,920,607	56,250,000
		426,303,347	417,446,653	843,750,000
Sewage disposal fund				
	2019	$ 5,884,359	$ 21,615,641	$ 27,500,000
	2020	6,134,481	21,365,519	27,500,000
	2021	6,395,235	21,104,765	27,500,000
	2022	6,667,073	20,832,927	27,500,000
	2023	6,950,466	20,549,534	27,500,000
	2024-2028	39,443,211	98,056,789	137,500,000
	2029-2033	48,569,730	88,930,270	137,500,000
	2034-2038	59,807,979	77,692,021	137,500,000
	2039-2043	73,646,575	63,853,425	137,500,000
	2044-2048	90,687,199	46,812,801	137,500,000
	2049-2053	111,670,746	25,829,254	137,500,000
	2054-2057	65,180,369	3,569,631	68,750,000
		521,037,423	510,212,577	1,031,250,000
Total business-type activities		$ 947,340,770	$ 927,659,230	$1,875,000,000

The assets acquired through the leases noted above are summarized as follows:

	Cost	Accumulated Depreciation	Ending Book Value
Water fund			
Land	$ 34,166,736	$ -	$ 34,166,736
Easements	258,632,397	-	258,632,397
Site Improvements	57,687,528	22,853,706	34,833,822
Buildings and Structures	555,224,787	88,551,667	466,673,120
Infrastructure	586,102,646	94,332,129	491,770,517
Machinery and Equipment	596,885,206	151,008,134	445,877,072
Vehicles	1,481,013	1,060,071	420,942
	2,090,180,313	357,805,707	1,732,374,606
Sewage disposal fund			
Land	28,733,333	-	28,733,333
Easements	96,211,323	-	96,211,323
Site Improvements	36,265,930	16,989,529	19,276,401
Buildings and Structures	1,058,604,451	133,918,374	924,686,077
Infrastructure	596,856,313	34,515,910	562,340,403
Machinery and Equipment	1,090,752,050	261,514,220	829,237,830
Vehicles	1,352,511	1,105,940	246,571
	2,908,775,911	448,043,973	2,460,731,938
Total business-type activities	$4,998,956,224	$ 805,849,680	$4,193,106,544

As part of the 2018 Memorandum of Understanding (MOU) with DWSD dated June 2018, the MBO requirement for six months of lease payments made to DWSD on January 1, 2016 will be treated as prepaid lease payments. The initial term of the leases began on the effective date and ends on December 31, 2055. GLWA's last monthly payment shall be June 1, 2055 and GLWA's $25 million lease pre-payment on January 1, 2016 shall be applied to the period of July 1, 2055 through December 31, 2055. Of the $25 million recorded as a prepaid on the statement of net position, $11,250,000 is recorded in the water fund and $13,750,000 in the sewage disposal fund.

15. LEASE OBLIGATION - RAW WATER RIGHTS

A lease obligation has been recorded related to the license of the raw water rights that were part of the 30-year service contract with the City of Flint. This lease obligation represents the future credits to the City of Flint's water bills as the City of Flint satisfies its monthly bond payment obligations to KWA. See related footnote for the raw water rights intangible asset (Note 8).

	Beginning Balance	Increase	Decrease	Ending Balance
Lease obligation - raw water rights	$ -	$ 106,999,919	$ (759,343)	$ 106,240,576

The future credits to be issued are detailed below:

Year Ended June 30,	Principal	Interest	Total
2019	$ 2,999,458	$ 3,980,046	$ 6,979,504
2020	2,520,996	4,131,352	6,652,348
2021	2,624,820	4,027,432	6,652,252
2022	2,734,246	3,919,206	6,653,452
2023	2,845,282	3,806,495	6,651,777
2024-2028	16,090,783	17,172,823	33,263,606
2029-2033	19,688,493	13,571,493	33,259,986
2034-2038	24,097,490	9,164,433	33,261,923
2039-2043	28,187,150	3,811,606	31,998,756
2044-2046	4,451,858	158,742	4,610,600
	$ 106,240,576	$ 63,743,628	$ 169,984,204

16. RISK MANAGEMENT / SELF-INSURANCE PROGRAMS

The Authority is exposed to various types of risk of loss including torts; theft of, damage to, or destruction of assets; errors or omissions; job related illnesses or injuries to employees; natural disasters; and environmental occurrences. Also included are risk of loss associated with providing medical benefits to employees.

The Authority purchases a variety of insurance policies including: public officials and employment practices liability insurance, property insurance, pollution legal liability insurance and casualty insurance for workers' compensation, general liability, and automobile liability. The Authority purchases excess liability insurance for its casualty program which provides per occurrence and aggregate protection for up to $8 million. The Authority's retention is $1,250,000 for workers' compensation and $250,000 for general liability and automobile. The Authority also has coverage under a pollution legal liability policy with limits of $50 million, a property insurance policy with limits of $750 million and a public officials policy with limits of $25 million.

Settled claims relating to commercial insurance have not exceeded the amount of insurance coverage since inception of the Authority.

A liability for claims is reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. Liabilities include an amount for claims that have been incurred but not reported. Claim liabilities are calculated considering the effects of recent claim settlement trends including frequency and amount of payouts and other economic and social factors. The claim liabilities also include estimated costs for claim administration fees and outside legal and medical assistance costs. The liabilities for workers' compensation current year claims is based on estimates and payments are based on actuals.

Notes To Financial Statements

Under most circumstances, the Authority's maximum loss retention per occurrence was as follows:

Type of Risk	Maximum Retention Per Occurrence
Workers' compensation	$1,250,000 per occurrence
General and automobile liability	$250,000 per occurrence
Motor vehicle physical damage	Authority assumes all risk
Property damage	$1,000,000 per occurrence
Public officials	$250,000 per occurrence
Pollution legal liability	$500,000 per occurrence

The Authority estimates the liability for medical and worker's compensation claims that have been incurred through the end of the fiscal year, including claims that have been reported as well as those that have not yet been reported, which includes estimates of both future payments of losses and related claim adjustments expense. The liability is based on individual claims and management's evaluation of experience with respect to the probable number and nature of claims. Any adjustments resulting from settlement of losses will be reflected in earnings at the time the adjustments are determined.

Medical insurance. The Authority provides medical benefits to a significant number of employees through a self-insured health plan that is administered by third party administrators. The Authority purchased stop loss insurance for its self-insured health plan with terms of $300,000 per contract to reduce risk exposure for the group. The self-insured program is administered by a third-party administrator who provides claims review and processing services as well as illustrated premium rates, which are anticipated, over time, to approximate the actual cost of benefits.

	2018	2017
Unpaid claims, beginning of year	$ 1,026,178	$ 933,567
Incurred claims (including change in IBNR provisions)	8,598,908	8,986,780
Claims payments	(8,581,019)	(8,894,169)
Unpaid claims, end of year	$ 1,044,067	$ 1,026,178

Workers' compensation. The Authority maintains a self-insurance program for workers' compensation coverage up to the amount of its retention. The program is administered by a third-party who provides claim review and medical bill review services.

Changes in the balances of claims liabilities during the past two years are as follows:

	2018	2017
Unpaid claims, beginning of year	$ 250,000	$ 351,231
Incurred claims (including change in IBNR provisions)	254,899	238,483
Claims payments	(201,660)	(339,714)
Unpaid claims, end of year	$ 303,239	$ 250,000

17. DEFINED CONTRIBUTION PENSION PLANS

Defined Contribution Plans

The Great Lakes Water Authority Defined Contribution Retirement Plan is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the "Administrator") to provide benefits at retirement to all full-time employees of the Authority. The Authority contributes 6.0% of earnings to the plan. The Authority will make an additional contribution to the 401(a) plan to match employee pre-tax contributions under the Great Lakes Water Authority 457 Plan up to 3% of compensation. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. Employer contributions totaled $4,278,051 for the year ended June 30, 2018. At June 30, 2018, there were 1,025 plan members.

The Great Lakes Water Authority Defined Contribution Plan Make-Up Benefit is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the "Administrator") to provide benefits at retirement to all employees who terminated employment with DWSD on or around January 1, 2016 and were not vested in the City of Detroit General Retirement System (GRS). Eligible employees are required to rollover to the Authority's Section 457 Deferred Compensation Plan their refunded employee mandatory contribution from GRS. The amount of the make-up benefit determined by an actuary based on the present value of the lost GRS benefit was $791,113 as of June 30, 2018. No contributions were made or required during the current year. Employees are 100% vested after one year of service.

The Authority has also adopted a Section 457 Deferred Compensation Plan which employees can make pre-tax contributions which are immediately 100% vested. At June 30, 2018, there were 830 plan members.

Retirement Health Savings Plan

The Authority also provides a Retirement Health Savings Program for full-time employees. Employees are required to contribute $10 per pay period and the Authority contributes $80 per pay period. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. Employer contributions were $1,878,206 and employee contributions were $236,262 for the year ended June 30, 2018. At June 30, 2018, there were 1,175 plan members.

Notes To Financial Statements

18. NET PENSION LIABILITY (SPECIAL FUNDING SITUATION)

As part of the City of Detroit bankruptcy plan of adjustment (POA) and the Leases (Section 4.3), the City, the City of Detroit General Employees' Retirement system (GRS or the "System") and the Authority entered into an agreement on December 1, 2015 that set forth the terms for contributions and reporting of the DWSD share of the GRS pension pool. GRS provides the information necessary for the Authority and DWSD to report the proportionate share separately in their respective statements. On January 24, 2017, DWSD and the Authority provided a supplement to the agreement whereby GRS is directed to allocate investments and pension liabilities of the DWSD division on the basis of 70.3% to the Authority and 29.7% to DWSD effective January 1, 2016. This information is available in a separate audit report for the "Legacy Pension Plan (Component II) of the General Retirement System of the City of Detroit Statement of Changes in Fiduciary Net Position by Division with Supplemental Information as of June 30, 2018" and is available by contacting the Authority's management. This agreement constitutes a special funding situation pursuant to the provisions of GASB 68, *Accounting and Financial Reporting for Pensions.* As such, while no Authority employees earn service credit in the legacy or hybrid plans, GLWA is legally responsible for making substantial contributions to a legacy pension plan of another entity and, accordingly, must record a net pension liability for its proportion and make the following disclosures regarding the plan as required by the standard.

Plan Administration. The Authority contributes to (and DWSD participates in) the System. The System is a single employer plan composed of a defined benefit plan component and a defined contribution annuity plan component. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. The plan is administered by its own board of trustees. Plan members include active employees, retirees and beneficiaries from various departments within the City. Benefit terms have been established by contractual agreements between the City and the employees' collective bargaining units; amendments are subject to the same process.

The System issues publicly available financial reports that include financial statements and the required supplementary information. The reports can be obtained from City of Detroit Retirement Systems, One Detroit Center, 500 Woodward Avenue, Suite 3000, Detroit, MI 48226 or obtained from the Systems' website (www.rscd.org). Detailed information about the pension plan's fiduciary net position is available in the separately issued financial reports.

Benefits Provided. Plan members may retire at age 55 or 60 with 5, 8, 10 or 25 years of credited service depending on which group the employee is in. Members are vested after completing 5, 8 or 10 years of credited service. Retirement options that provide for survivor benefits are available to members. The Plan also provides death and disability benefits. If a member leaves employment or dies before vesting, accumulated member contributions plus interest are refunded to the member or designated beneficiary.

Component II is the legacy plan, the original defined benefit plan, which includes a defined benefit component and a defined contribution component. Component II generally applies to benefits accrued by members prior to July 1, 2014. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. Except as specifically provided in the combined plan, benefits provided under Component II are frozen effective June 30, 2014. Component II also includes the income stabilization fund. The fund, a part of Component II and established as a provision of the POA, was established for the sole purpose of paying the income stabilization benefits to eligible pensioners. Complete details regarding the Component II benefits and changes in those benefits by virtue of the POA are presented in the System financial statements.

Notes To Financial Statements

Employer Contributions. Employer contributions, including the Authority's nonemployer contribution, for the respective components are as follows:

Employer contributions to the GRS were determined by the provisions of the POA. The 2016 employer contributions in Component II were sourced from the one-time sale of City-owned artwork with proceeds from the Foundation for Detroit's Future in the amount of $32,886,827 along with $4,005,830 from unlimited tax general obligation bonds and $67,900,000 of contributions from the City and related entities, of which $45,400,000 of contributions were from GLWA and DWSD. Employer contributions were also made into the income stabilization fund in the amount of $1,689,857 from the bond proceeds. The 2017 employer contributions were sourced from the Foundation for Detroit's Future in the amount of $375,000, $22,588,402 from unlimited tax general obligation bonds received and receivable in 2017 and $68,275,000 of contributions from the City, City-related entities and the Authority. Employer contributions were also made into the Income Stabilization Fund in the amount of $9,539,874 from the unlimited tax general obligation bond refunding proceeds. In 2018 employer contributions were sourced from the Foundation for Detroit's Future in the amount of $375,000, and approximately $67.9 million of contributions from the City, City-related entities and the Authority. Employer contributions were also made into the Income Stabilization Fund for $88,494 from the unlimited tax general obligation stub bond proceeds.

The POA obligates DWSD to pay $2,500,000 per year towards administrative costs and annual plan contributions of $42,900,000 per year in total for both water and sewer employees, until 2023. Pursuant to the leases, the Authority is obligated to pay its allocable share of such liability. The portion allocated to the Authority is $31,916,200 for fiscal year 2018. Subsequent to 2023, DWSD and the Authority will be responsible for paying their allocable share of any additional amounts that are actuarially determined to be payable.

The information below represents the Authority's share of pension liability activity. DWSD separately reports its prorata share of activity in its separate financial statements.

DWSD Employee Contributions. Contribution requirements of plan members are established and may be amended by the GRS Board of Trustees in accordance with the City Charter, union contracts, and plan provisions. For the year ended June 30, 2018, there were minimal employee contributions into Component II, only related to military service credit, as the plan was frozen as of June 30, 2014; contributions into Component I began thereafter.

Net Pension Liability. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

Actuarial Assumptions. The total pension liability in the June 30, 2017 actuarial valuation was determined using the following actuarial assumptions.

Inflation	not applicable
Salary increases	not applicable
Investment rate of return	6.91%, net of investment expense and including inflation

The actuarial assumptions were based on an experience study from 2008-2013 issued in February 2015; the mortality table assumption was based on RP-2014 Blue Collar Annuitant Table for males and females. The tables are projected to be fully generational, based on two-dimensional sex distinct mortality scale MP-2014.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each asset class. These real ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each asset class that is included in the pension plan's target asset allocation as of June 30, 2017, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return	Expected Money-Weighted Rate of Return
Global equity	43.0%	5.33%	2.29%
Global fixed income	16.0%	3.07%	0.49%
Private equity	8.0%	7.23%	0.58%
Cash	1.0%	0.29%	0.00%
Real estate	10.0%	3.46%	0.35%
Global asset allocation/risk parity/real assets	17.0%	4.06%	0.69%
Hedge funds	5.0%	4.17%	0.21%
	100.0%		4.61%
Inflation			2.30%
Investment rate of return			6.91%

Discount Rate. The discount rate used to measure the total pension liability was 6.91%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that Authority contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in the Net Pension Liability. The components of the change in the Authority's share of the net pension liability are summarized as follows:

	Water	Sewage Disposal	Total
Total pension liability	$ 198,242,719	$ 354,791,535	$ 553,034,254
Plan fiduciary net position	(134,091,367)	(239,980,980)	(374,072,347)
Authority's net pension liability	$ 64,151,352	$ 114,810,555	$ 178,961,907

Notes To Financial Statements

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Water fund			
Balances at June 30, 2017	$ 196,712,089	$ 127,143,045	$ 69,569,044
Changes for the year:			
Interest	13,560,348	-	13,560,348
Differences between expected and actual experience	849,266	-	849,266
Changes in assumptions	5,431,838	-	5,431,838
Employer contributions	-	10,810,800	(10,810,800)
Net investment income	-	13,912,782	(13,912,782)
Benefit payments, including refunds of employee contributions	(18,310,822)	(18,310,822)	-
Other changes	-	535,562	(535,562)
Net changes	1,530,630	6,948,322	(5,417,692)
Balances at June 30, 2018	$ 198,242,719	$ 134,091,367	$ 64,151,352

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Sewage disposal fund			
Balances at June 30, 2017	$ 352,052,192	$ 227,545,688	$ 124,506,504
Changes for the year:			
Interest	24,268,718	-	24,268,718
Differences between expected and actual experience	1,519,917	-	1,519,917
Changes in assumptions	9,721,266	-	9,721,266
Employer contributions	-	19,347,900	(19,347,900)
Net investment income	-	24,899,462	(24,899,462)
Benefit payments, including refunds of employee contributions	(32,770,558)	(32,770,558)	-
Other changes	-	958,488	(958,488)
Net changes	2,739,343	12,435,292	(9,695,949)
Balances at June 30, 2018	$ 354,791,535	$ 239,980,980	$ 114,810,555

Notes To Financial Statements

Sensitivity of the Net Pension Liability to Changes in the Discount Rate. The following presents the net pension liability of the Authority, calculated using the discount rate of 6.91%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is 1% lower (5.91%) or 1% higher (7.91%) than the current rate:

	1% Decrease (5.91%)	Current Discount Rate (6.91%)	1% Increase (7.91%)
Water	$ 83,392,249	$ 64,151,352	$ 48,655,803
Sewage disposal	147,455,969	114,810,555	87,078,442
Authority's net pension liability	$ 230,848,218	$ 178,961,907	$ 135,734,245

Pension Plan Fiduciary Net Position. Detailed information about the pension plan's fiduciary net position is available in the separately issued plan financial statements.

Pension Expense and Deferred Outflows and Inflows of Resources Related to Pensions. For the year ended June 30, 2018, the Authority recognized pension expense of $8,933,691 and $15,988,471 for the water and sewage disposal funds, respectively. At June 30, 2018, the Authority reported deferred outflows and inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
Water fund			
Net difference between projected and actual earnings on pension plan investments	$ 7,834,919	$ 7,260,572	$ 574,347
Employer contributions to the plan subsequent to the measurement date	10,810,800	-	10,810,800
	18,645,719	7,260,572	11,385,147
Sewage disposal fund			
Net difference between projected and actual earnings on pension plan investments	14,022,017	12,994,118	1,027,899
Employer contributions to the plan subsequent to the measurement date	19,347,900	-	19,347,900
	33,369,917	12,994,118	20,375,799
Total business-type activities	$ 52,015,636	$ 20,254,690	$ 31,760,946

The amount reported as deferred outflows of resources resulting from contributions subsequent to the measurement date will be recognized as a reduction in the net pension liability for the year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pension will be recognized in pension expense as follows:

Year Ended June 30,	Water	Sewage Disposal	Total
2019	$ (1,431,522)	$ (2,561,970)	$ (3,993,492)
2020	1,851,365	3,313,356	5,164,721
2021	1,148,925	2,056,211	3,205,136
2022	(994,421)	(1,779,698)	(2,774,119)
Total	$ 574,347	$ 1,027,899	$ 1,602,246

Payable to the Pension Plan. At June 30, 2018, the Authority did not have any outstanding contributions payable to the pension plan for the year then ended.

19. COMMITMENTS AND CONTINGENCIES

Capital Improvement Program

The Authority is engaged in a variety of projects that are part of its five-year capital improvement program (the "Program"). The total cost of this Program is anticipated to be approximately $712.8 million for the water fund and $633.2 million for the sewage disposal fund through fiscal year 2023. The Program is being financed primarily from revenue bond proceeds in addition to customer charges revenue. The latter is accounted for in the Improvement and Extension Fund as defined in the MBO. As of June 30, 2018, the water fund has unspent bond proceeds of $142.6 million and Improvement and Extension funds of $220.8 million available for use in addition to state revolving fund loan resources of $9,572,859 in funding these commitments. Similarly, the sewage disposal fund has unspent bond proceeds of $100.0 million and Improvement and Extension funds of $62.5 million available for use in addition to state revolving loan resources of $73,934,487 in funding these commitments.

The total amount of construction contract commitments outstanding at June 30, 2018 was approximately $52.0 million for the water fund and $134.0 million for the sewage disposal fund.

Contingencies

The Authority is subject to various government environmental laws and regulations. GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations,* established accounting and financial reporting standards for pollution (including contamination) remediation obligations, which are obligations to address the current or potential detrimental effects of existing pollution by participating in pollution remedial activities such as site assessments and cleanups. The standard excludes pollution prevention or control obligations with respect to current operations, and future pollution remediation activities that are required upon retirement of an asset, such as landfill closure and post-closure care. The Authority determined that there were no estimated pollution remediation obligations to be recorded at June 30, 2018.

Notes To Financial Statements

The sewage disposal fund's operations are subject to regulation pursuant to the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (collectively, the Clean Water Act). Included in the regulatory framework established by the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) permit program, which requires operation of wastewater system facilities according to discharge limitations and other requirements as set forth in permits issued to each facility. The Environmental Protection Agency (EPA) has authorized the Michigan Department of Environmental Quality (MDEQ) to implement and enforce the federal NPDES permit program. The sewage disposal fund operates pursuant to the NPDES Permit. The Authority's current NPDES permit expired on October 1, 2018; however, it remains in effect until the MDEQ issues a new NPDES permit. GLWA expects the MDEQ to issue a new NPDES permit between March-May 2019.

The Authority is a defendant in numerous alleged claims, lawsuits, billing disputes, and other stated and pending demands. The Authority's Legal Department has estimated a reserve of $2,245,000 for the water fund and $7,834,392 for the sewage disposal fund, which are included in the accompanying financial statements, for the potential outcome of such claims or the amount of potential damages in the event of an unfavorable outcome for each of the above contingencies. The Authority's management believes that any differences in reserved amounts and final settlement, after consideration of claims covered by insurance, resulting from such litigation will not materially impact the Authority's financial position or results of operations.

The Authority holds various commercial insurance policies to cover other potential loss exposures.

20. SUBSEQUENT EVENTS

Reconciliation Committee and DWSD Budget Shortfall

On June 27, 2018, the Board of Directors for the Authority and the Board of Water Commissioners for the DWSD approved a Memorandum of Understanding (MOU). The Leases and the Water and Sewer Services Agreement ("WSSA") between the City and GLWA and the MBO, govern the relationship between DWSD and GLWA, which began on January 1, 2016 (the "Effective Date"). The purpose of the MOU is to (a) provide clarification of specific sections of the Leases, WSSA and MBO; (b) make adjustments contemplated by the Leases and the WSSA; and (c) address the liquidation of specific liabilities. Most financial provisions of the MOU were recorded by GLWA in the June 30, 2017 year-end financial statements based on an executed term sheet that preceded the final MOU in April 2018. Because DWSD's financial statements were already issued, the financial impact of the MOU will be reflected in the DWSD financial statements for the year ending June 30, 2018.

Item 9 of the executed MOU outlines requirements for the Reconciliation Committee—originally defined by the WSSA—to meet quarterly to "expand the level of communication between the two entities related to financial, operational, legal, capital planning, and other matters and opportunities for improved management and coordination of both entities and foster a positive partnership in the water services sector." Item 12 further describes a specific function of the Reconciliation Committee to address any "cumulative negative variance of more than two percent (2%) of the total budget for either Local System."

Notes To Financial Statements

As of June 30, 2018, GLWA reports a net positive water fund balance for the DWSD balance of required trust receipts and disbursements under the MBO. GLWA reports a negative balance of $47,768,427 for the DWSD sewer fund which exceeds the two percent variance threshold. The budget shortfall not cured by the end of the fiscal year following the year in which they arise shall be repaid in full, in installments over a period not to exceed three fiscal years. A surcharge based on the three-year U.S treasury note rate plus 150 basis points. The negative balance of $27,514,000 from the prior year is recorded as a loan receivable (note 6). The Reconciliation Committee has met and discussed this variance as required. As of November 7, 2018, DWSD (as operator of the Local System) has discussed options to cure this shortfall with its Board of Water Commissioners and at a Reconciliation Committee meeting on October 19, 2018. A written agreement is presently under discussion to document the plan to cure.

Water Bond Refunding, Sewer Bond Refunding and Sewer New Money Bond Transaction

On October 3, 2018, the Authority issued a water bond refunding transaction and a bond refunding and new money sewage system transaction. The Authority issued $155,595,000 of Water Supply System Revenue Bonds and $257,465,000 of Sewage Disposal System Revenue Bonds ($81,595,000 in new money and $175,870,000 in refunding bonds). The net present value savings from the refunding transactions was a total of $59.42 million with $24.90 million for the water fund and $34.52 million for the sewage disposal fund.

Rating Agency Upgrades

In September 2018, S&P Global Ratings upgraded the Authority's senior lien water system rating by three notches to AA- and its second lien water system rating by three notches to A+. It also upgraded the Authority's senior lien sewer system rating up by two notches to A+, and its second lien sewer system was increased by two notches to A. Both the senior and second sewer liens were assigned a positive outlook. Moody's Investors Service upgraded the Authority's water system and sewer system senior lien ratings one notch to A2, and its second lien ratings one notch to A3. All were assigned a stable outlook. Fitch affirmed the Authority's ratings for its water system and sewer system senior lien bonds at an A, and its second lien bonds at an A-, both with positive outlooks.

The Authority has increased its use of the State of Michigan's state revolving fund (SRF) loans as a lower cost of borrowing resource. Given the Authority's level of participation in the program, the Authority was asked by the State to seek a rating for the corresponding debt category (i.e. junior lien bonds). In November 2018, S&P Global Ratings assigned an A+ rating to the Authority's junior lien water system SRF bonds and an A rating to the Authority's junior lien sewer system SRF bonds.

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REQUIRED SUPPLEMENTARY INFORMATION

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II
Schedule of Changes in Net Pension Liability and Related Ratios - Water Fund

	Fiscal Year Based on Measurement Date		
	2017*	2016*	2015**
Share of total pension liability			
Interest	$ 13,560,348	$ 14,475,348	$ 18,422,673
Differences between expected and actual experience	849,266	(1,815,233)	(153,112)
Changes in assumptions	5,431,838	6,318,782	(7,093,982)
Benefit changes	-	-	(54,618,440)
Benefit payments, including refunds of employee contributions	(18,310,822)	(24,963,262)	(19,462,302)
Net change	1,530,630	(5,984,365)	(62,905,163)
Share of total pension liability, beginning of year	196,712,089	202,696,454	265,601,617
Share of total pension liability, end of year	198,242,719	196,712,089	202,696,454
Share of plan fiduciary net position			
Employer contributions	10,810,800	10,810,800	10,808,000
Employee contributions	-	-	46,941
Net investment income (loss)	13,912,782	(470,295)	6,194,355
Benefit payments, including refunds of employee contributions	(18,310,822)	(24,963,262)	(19,462,302)
Administrative expense	-	-	(7,633)
Other changes	535,562	90,427	9,950,436
Net change	6,948,322	(14,532,330)	7,529,797
Share of plan fiduciary net position, beginning of year	127,143,045	141,675,375	134,145,578
Share of plan fiduciary net position, end of year	134,091,367	127,143,045	141,675,375
Share of net pension liability	$ 64,151,352	$ 69,569,044	$ 61,021,079
Nonemployer contributing entity share of collective net pension liability - Water Fund	6.8%	7.0%	7.4%
Plan fiduciary net position as a percentage of total pension liability	67.6%	64.6%	69.9%

*As described in Notes 1 and 12 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. This reflects only the portion allocated to GLWA.

**The 2015 information is presented based on City of Detroit Water and Sewerage Department (DWSD) prior to the establishment of GLWA. The amounts shown represent GLWA's allocation, fiduciary net position and net pension liability. The actual employer contributions made by DWSD were $18,440,222.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II
Schedule of Changes in Net Pension Liability and Related Ratios - Sewage Disposal Fund

	Fiscal Year Based on Measurement Date		
	2017*	2016*	2015**
Share of total pension liability			
Interest	$ 24,268,718	$ 25,906,278	$ 32,970,738
Differences between expected and actual experience	1,519,917	(3,248,690)	(274,022)
Changes in assumptions	9,721,266	11,308,613	(12,695,976)
Benefit changes	-	-	(97,749,668)
Benefit payments, including refunds of employee contributions	(32,770,558)	(44,676,314)	(34,831,342)
Net change	2,739,343	(10,710,113)	(112,580,270)
Share of total pension liability, beginning of year	352,052,192	362,762,305	475,342,575
Share of total pension liability, end of year	354,791,535	352,052,192	362,762,305
Share of plan fiduciary net position			
Employer contributions	19,347,900	19,347,900	19,342,889
Employee contributions	-	-	84,010
Net investment income (loss)	24,899,462	(841,679)	11,085,930
Benefit payments, including refunds of employee contributions	(32,770,558)	(44,676,314)	(34,831,342)
Administrative expense	-	-	(13,661)
Other changes	958,488	161,836	17,808,122
Net change	12,435,292	(26,008,257)	13,475,948
Share of plan fiduciary net position, beginning of year	227,545,688	253,553,946	240,077,998
Share of plan fiduciary net position, end of year	239,980,980	227,545,689	253,553,946
Share of net pension liability	$ 114,810,555	$ 124,506,503	$ 109,208,359
Nonemployer contributing entity share of collective net pension liability - Sewage Disposal Fund	12.2%	12.5%	13.2%
Plan fiduciary net position as a percentage of total pension liability	67.6%	64.6%	69.9%

*As described in Notes 1 and 12 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. This reflects only the portion allocated to GLWA.

**The 2015 information is presented based on City of Detroit Water and Sewerage Department (DWSD) prior to the establishment of GLWA. The amounts shown represent GLWA's allocation, fiduciary net position and net pension liability. The actual employer contributions made by DWSD were $24,448,667.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II
Schedule of Contributions

	Fiscal Year Based on Measurement Date	
	2017*	2016*
Water fund		
Contractually required contribution**	$ 10,810,800	$ 10,810,800
Actual contribution	10,810,800	10,810,800
Contribution deficiency (excess)	$ -	$ -
Sewage disposal fund		
Contractually required contribution**	$ 19,347,900	$ 19,347,900
Actual contribution	19,347,900	19,347,900
Contribution deficiency (excess)	$ -	$ -

*As described in Notes 1 and 12 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. This reflects only the portion allocated to GLWA.

**Contributions are determined by the provisions of the Plan of Adjustment and are not actuarially determined.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

COMBINING AND INDIVIDUAL FUND SCHEDULES

Combining Schedule of Net Position

Water Fund
June 30, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Assets				
Current assets:				
Cash and cash equivalents	$ 89,276,582	$ 220,808,639	$ -	$ 310,085,221
Restricted cash and cash equivalents	45,229,953	9,997	5,857,392	51,097,342
Restricted cash for the benefit of DWSD	8,418,827	-	-	8,418,827
Investments	7,004,525	-	-	7,004,525
Restricted investments	1,234,954	-	-	1,234,954
Receivables:				
Billed	38,272,740	-	-	38,272,740
Unbilled	29,229,709	-	-	29,229,709
Other	5,850	-	-	5,850
Allowance for doubtful accounts	(6,221,815)	-	-	(6,221,815)
Due from other governments	23,588,754	-	-	23,588,754
Due from other funds	-	317,866	12,427	330,293
Due from other water funds	-	64,114	6,183,209	6,247,323
Contractual obligation receivable, current portion	13,560,086	-	-	13,560,086
Prepaid items and other assets	2,897,947	-	368,025	3,265,972
Total current assets	252,498,112	221,200,616	12,421,053	486,119,781
Noncurrent assets:				
Restricted cash and cash equivalents	7,946,754	-	10,314,952	18,261,706
Restricted investments	18,119,767	-	132,316,458	150,436,225
Contractual obligation receivable	477,039,443	-	-	477,039,443
Prepaid lease	11,250,000	-	-	11,250,000
Assets not subject to depreciation	434,684,895	-	-	434,684,895
Capital assets being depreciated, net	1,499,118,693	-	-	1,499,118,693
Intangible asset - raw water rights, net	104,919,365	-	-	104,919,365
Prepaid insurance on debt	13,002,376	-	-	13,002,376
Total noncurrent assets	2,566,081,293	-	142,631,410	2,708,712,703
Total assets	2,818,579,405	221,200,616	155,052,463	3,194,832,484
Deferred outflows of resources				
Deferred charge on refunding	94,431,823	-	-	94,431,823
Deferred pension amounts	18,645,719	-	-	18,645,719
Total deferred outflows of resources	113,077,542	-	-	113,077,542

continued...

Combining Schedule of Net Position

Water Fund
June 30, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Liabilities				
Current liabilities:				
Accounts and contracts payable	$ 18,866,647	$ 567,640	$ 14,320,247	$ 33,754,534
Accrued salaries, wages and benefits	4,734,956	-	-	4,734,956
Other accrued liabilities	12,679,692	-	-	12,679,692
Due to other governments	11,935,868	-	-	11,935,868
Due to other funds	3,290,460	157,467	-	3,447,927
Due to other water funds	6,247,323	-	-	6,247,323
Interest payable	39,322,324	-	-	39,322,324
Current portion of:				
Long-term debt	20,569,843	-	-	20,569,843
Lease payable	4,814,476	-	-	4,814,476
Lease obligation - raw water rights	2,999,458	-	-	2,999,458
Obligation payable	167,794	-	-	167,794
Accrued compensated absences	2,212,326	-	-	2,212,326
Accrued workers' compensation	228,239	-	-	228,239
Claims and judgments	2,195,000	-	-	2,195,000
Total current liabilities	130,264,406	725,107	14,320,247	145,309,760
Noncurrent liabilities:				
Long-term debt	2,545,529,255	-	-	2,545,529,255
Long-term lease payable	421,488,871	-	-	421,488,871
Lease obligation - raw water rights	103,241,118	-	-	103,241,118
Obligation payable	17,097,709	-	-	17,097,709
Accrued compensated absences	2,174,506	-	-	2,174,506
Accrued workers' compensation	75,000	-	-	75,000
Claims and judgments	50,000	-	-	50,000
Other noncurrent liabilities	2,634,471	-	-	2,634,471
Net pension liability	64,151,352	-	-	64,151,352
Total noncurrent liabilities	3,156,442,282	-	-	3,156,442,282
Total liabilities	3,286,706,688	725,107	14,320,247	3,301,752,042
Deferred inflows of resources				
Deferred amounts for swap terminations	80,342	-	-	80,342
Deferred gain on refunding	59,252,431	-	-	59,252,431
Deferred pension amounts	7,260,572	-	-	7,260,572
Total deferred inflows of resources	66,593,345	-	-	66,593,345
Net position				
Net investment in capital assets	60,799,635	-	-	60,799,635
Restricted for debt service	23,239,368	-	-	23,239,368
Restricted for capital acquisition	-	-	140,732,216	140,732,216
Restricted for payment assistance program	2,462,214	-	-	2,462,214
Unrestricted deficit	(508,144,303)	220,475,509	-	(287,668,794)
Total net position	$ (421,643,086)	$ 220,475,509	$ 140,732,216	$ (60,435,361)

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Combining Schedule of Revenues, Expenses and Changes in Fund Net Position

Water Fund
For the Year Ended June 30, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Operating revenues				
Wholesale customer charges	$ 323,117,344	$ -	$ -	$ 323,117,344
Local system charges	15,130,600	-	-	15,130,600
Other revenues	64,200	-	-	64,200
Total operating revenues	338,312,144	-	-	338,312,144
Operating expenses				
Operating expenses before depreciation and amortization:				
Personnel	41,845,295	-	-	41,845,295
Contractual services	35,794,549	-	-	35,794,549
Utilities - gas	937,628	-	-	937,628
Utilities - electric	25,477,974	-	-	25,477,974
Utilities - sewage	453,433	-	-	453,433
Utilities - water	2,046	-	-	2,046
Chemicals	4,804,768	-	-	4,804,768
Supplies and other expenses	9,543,615	-	-	9,543,615
Capital program allocation	(713,779)	-	-	(713,779)
Shared services allocation	(9,615,146)	-	-	(9,615,146)
Total operating expenses before depreciation and amortization	108,530,383	-	-	108,530,383
Depreciation	143,991,815	-	-	143,991,815
Amortization of intagible asset - raw water rights	2,080,554	-	-	2,080,554
Total operating expenses	254,602,752	-	-	254,602,752
Operating income (loss)	83,709,392	-	-	83,709,392
Nonoperating revenues (expenses)				
Earnings on investments	3,629,807	859,590	1,640,133	6,129,530
Interest on obligations receivable	23,351,220	-	-	23,351,220
Interest expense	(139,343,204)	-	-	(139,343,204)
Costs of issuance and amortization of debt related items	13,770,418	-	67,167	13,837,585
Legacy pension expense	(8,933,691)	-	-	(8,933,691)
WRAP (Water Residential Assistance Program)	(1,506,554)	-	-	(1,506,554)
Other	(544,813)	-	-	(544,813)
Capital outlay	38,870,746	(1,984,317)	(36,886,429)	-
Gain (loss) on disposal of capital assets	(6,225)	-	-	(6,225)
Loss on impairment of capital assets	(654,451)	-	-	(654,451)
Total nonoperating revenues (expenses)	(71,366,747)	(1,124,727)	(35,179,129)	(107,670,603)
Income (loss) before transfers	12,342,645	(1,124,727)	(35,179,129)	(23,961,211)
Transfer in	859,590	46,739,700	2,936,351	50,535,641
Transfer out	(49,676,051)	(859,590)	-	(50,535,641)
Change in net position	(36,473,816)	44,755,383	(32,242,778)	(23,961,211)
Net position (deficit), beginning of year	(385,169,270)	175,720,126	172,974,994	(36,474,150)
Net position (deficit), end of year	$ (421,643,086)	$ 220,475,509	$ 140,732,216	$ (60,435,361)

Note: Transfers in (out) are used for recording financial activity related to bond proceeds and MBO requirements.

Combining Schedule of Net Position

Sewage Disposal Fund
June 30, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Assets				
Current assets:				
Cash and cash equivalents	$ 136,603,763	$ 62,452,793	$ -	$ 199,056,556
Restricted cash and cash equivalents	46,807,635	-	8,024,415	54,832,050
Investments	9,506,712	-	-	9,506,712
Restricted investments	31,790,386	-	-	31,790,386
Receivables:				
Billed	50,439,450	-	-	50,439,450
Unbilled	25,200,108	-	-	25,200,108
Other	3,723,036	-	-	3,723,036
Allowance for doubtful accounts	(32,863,001)	-	-	(32,863,001)
Due from other governments	24,339,106	-	-	24,339,106
Due from other funds	2,091,163	-	1,356,764	3,447,927
Due from other sewage disposal funds	-	7,322,016	14,907,438	22,229,454
Contractual obligation receivable, current portion	11,253,800	-	-	11,253,800
Loan receivable - DWSD	9,367,355	-	-	9,367,355
Prepaid items and other assets	1,466,758	-	216,901	1,683,659
Inventories	8,471,626	-	-	8,471,626
Total current assets	328,197,897	69,774,809	24,505,518	422,478,224
Noncurrent assets:				
Restricted cash and cash equivalents	12,151,366	-	17,849,987	30,001,353
Restricted investments	61,457,535	-	81,804,228	143,261,763
Contractual obligation receivable	335,574,500	-	-	335,574,500
Loan receivable - DWSD	19,932,645	-	-	19,932,645
Prepaid lease	13,750,000	-	-	13,750,000
Assets not subject to depreciation	271,362,100	-	-	271,362,100
Capital assets being depreciated, net	2,485,098,172	-	-	2,485,098,172
Prepaid insurance on debt	16,931,255	-	-	16,931,255
Total noncurrent assets	3,216,257,573	-	99,654,215	3,315,911,788
Total assets	3,544,455,470	69,774,809	124,159,733	3,738,390,012
Deferred outflows of resources				
Deferred charge on refunding	186,544,140	-	-	186,544,140
Deferred pension amounts	33,369,917	-	-	33,369,917
Total deferred outflows of resources	219,914,057	-	-	219,914,057

continued...

Combining Schedule of Net Position

Sewage Disposal Fund
June 30, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Liabilities				
Current liabilities:				
Accounts and contracts payable	$ 11,945,835	$ 525,934	$ 21,605,833	$ 34,077,602
Due to other governments	-	-	47,539	47,539
Due to other funds	12,427	317,866	-	330,293
Due to other sewage disposal funds	22,229,454	-	-	22,229,454
Interest payable	41,108,994	-	-	41,108,994
Current portion of:				
Long-term debt	61,186,207	-	-	61,186,207
Lease payable	5,884,359	-	-	5,884,359
Obligation payable	377,419	-	-	377,419
Accrued compensated absences	717,086	-	-	717,086
Claims and judgments	334,392	-	-	334,392
Total current liabilities	143,796,173	843,800	21,653,372	166,293,345
Noncurrent liabilities:				
Long-term debt	3,168,566,028	-	-	3,168,566,028
Long-term lease payable	515,153,064	-	-	515,153,064
Obligation payable	38,458,178	-	-	38,458,178
Claims and judgments	7,500,000	-	-	7,500,000
Other noncurrent liabilities	6,003,540	-	-	6,003,540
Net pension liability	114,810,555	-	-	114,810,555
Total noncurrent liabilities	3,850,491,365	-	-	3,850,491,365
Total liabilities	3,994,287,538	843,800	21,653,372	4,016,784,710
Deferred inflows of resources				
Deferred amounts for swap terminations	189,808	-	-	189,808
Deferred gain on refunding	46,654,836	-	-	46,654,836
Deferred pension amounts	12,994,118	-	-	12,994,118
Total deferred inflows of resources	59,838,762	-	-	59,838,762
Net position				
Net investment in capital assets	289,946,091	-	-	289,946,091
Restricted for debt service	101,996,536	-	-	101,996,536
Restricted for capital acquisition	-	-	102,506,361	102,506,361
Restricted for payment assistance program	3,308,896	-	-	3,308,896
Unrestricted deficit	(685,008,296)	68,931,009	-	(616,077,287)
Total net position	$ (289,756,773)	$ 68,931,009	$ 102,506,361	$ (118,319,403)

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Combining Schedule of Revenues, Expenses and Changes in Fund Net Position

Sewage Disposal Fund
For the Year Ended June 30, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Operating revenues				
Wholesale customer charges	$ 268,978,831	$ -	$ -	$ 268,978,831
Industrial waste charges	14,334,979	-	-	14,334,979
Pollutant surcharges	6,908,404	-	-	6,908,404
Local system charges	178,969,200	-	-	178,969,200
Other revenues	4,391,145	-	-	4,391,145
Total operating revenues	473,582,559	-	-	473,582,559
Operating expenses				
Operating expenses before depreciation:				
Personnel	53,680,162	-	-	53,680,162
Contractual services	64,082,761	-	-	64,082,761
Utilities - gas	5,674,141	-	-	5,674,141
Utilities - electric	15,395,993	-	-	15,395,993
Utilities - sewage	1,262,253	-	-	1,262,253
Utilities - water	4,490,912	-	-	4,490,912
Chemicals	8,073,045	-	-	8,073,045
Supplies and other expenses	24,982,773	-	-	24,982,773
Capital program allocation	(969,671)	-	-	(969,671)
Shared services allocation	(292,965)	-	-	(292,965)
Total operating expenses before depreciation	176,379,404	-	-	176,379,404
Depreciation	187,250,583	-	-	187,250,583
Total operating expenses	363,629,987	-	-	363,629,987
Operating income	109,952,572	-	-	109,952,572
Nonoperating revenues (expenses)				
Earnings on investments	3,805,035	217,547	1,243,673	5,266,255
Interest on obligations receivable	15,505,300	-	-	15,505,300
Interest expense	(161,052,102)	-	-	(161,052,102)
Costs of issuance and amortization of debt related items	(5,153,300)	-	-	(5,153,300)
Legacy pension expense	(15,988,471)	-	-	(15,988,471)
WRAP (Water Residential Assistance Program)	(2,248,980)	-	-	(2,248,980)
Other	(709,537)	-	-	(709,537)
Capital outlay	74,118,673	(4,740,820)	(69,377,853)	-
Gain (loss) on disposal of capital assets	2,469,703	-	-	2,469,703
Total nonoperating revenues (expenses)	(89,253,679)	(4,523,273)	(68,134,180)	(161,911,132)
Income (loss) before transfers	20,698,893	(4,523,273)	(68,134,180)	(51,958,560)
Transfer in	-	30,834,215	34,750,504	65,584,719
Transfer out	(65,367,172)	(217,547)	-	(65,584,719)
Change in net position	(44,668,279)	26,093,395	(33,383,676)	(51,958,560)
Net position (deficit), beginning of year	(245,088,494)	42,837,614	135,890,037	(66,360,843)
Net position (deficit), end of year	$ (289,756,773)	$ 68,931,009	$ 102,506,361	$ (118,319,403)

Note: Transfers in (out) are used for recording financial activity related to MBO requirements.

GREAT LAKES WATER AUTHORITY

Schedule of Operations and Maintenance Expense for Water Operations

Cost Type Category - Budget and Actual
For the Year Ended June 30, 2018

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification and Capital Outlay Elimination
Operating expenses			
Personnel	$ 66,479,800	$ 60,296,700	$ (18,337,300)
Contractual services	97,365,200	72,800,000	(36,077,800)
Utilities	31,727,200	28,788,000	(91,400)
Chemicals	6,338,300	5,198,400	-
Supplies and other expenses	20,453,900	19,541,000	(7,175,200)
Capital program allocation	(24,324,600)	(1,122,100)	-
Shared services allocation	(16,275,300)	(9,816,900)	-
Centralized services allocation	(56,455,500)	(43,247,500)	43,247,500
Administrative services allocation	(16,305,000)	(18,434,200)	18,434,200
Capital outlay	6,624,700	6,410,100	(6,410,100)
Unallocated reserve	5,933,900	1,149,100	-
Total operating expenses	$ 121,562,600	$ 121,562,600	$ (6,410,100)

Note: Centralized and adminstrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts. Capital outlay is an expense for budget purposes but is capitalized for accrual-based actual purposes. The balance in the reclassification represents reconciliation between budget and accrual basis.

Final Amended Budget	Actual	Amount Variance Actual-Budget	Percent Over (Under) Budget
$ 41,959,400	$ 41,845,295	$ (114,105)	-0.27%
36,722,200	35,794,549	(927,651)	-2.53%
28,696,600	26,871,081	(1,825,519)	-6.36%
5,198,400	4,804,768	(393,632)	-7.57%
12,365,800	9,543,615	(2,822,185)	-22.82%
(1,122,100)	(713,779)	408,321	-36.39%
(9,816,900)	(9,615,146)	201,754	-2.06%
-	-	-	0.00%
-	-	-	0.00%
-	-	-	0.00%
1,149,100	-	(1,149,100)	-100.00%
$ 115,152,500	$ 108,530,383	$ (6,622,117)	-5.75%

GREAT LAKES WATER AUTHORITY

Schedule of Operations and Maintenance Expense for Sewer Operations

Cost Type Category - Budget and Actual
For the Year Ended June 30, 2018

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification and Capital Outlay Elimination
Operating expenses			
Personnel	$ 34,633,400	$ 37,302,000	$ 18,337,300
Contractual services	30,452,700	35,679,900	36,077,800
Utilities	27,309,400	27,275,400	91,400
Chemicals	11,468,300	8,142,300	-
Supplies and other expenses	14,346,800	20,315,400	7,175,200
Capital program allocation	(1,034,000)	(890,800)	-
Shared services allocation	(6,400)	(292,600)	-
Centralized services allocation	56,455,500	43,247,500	(43,247,500)
Administrative services allocation	16,305,000	18,434,200	(18,434,200)
Capital outlay	728,700	704,600	(704,600)
Unallocated reserve	420,000	1,161,500	-
Total operating expenses	$ 191,079,400	$ 191,079,400	$ (704,600)

Note: Centralized and adminstrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts. Capital outlay is an expense for budget purposes but is capitalized for accrual-based actual purposes. The balance in the reclassification represents reconciliation between budget and accrual basis.

Final Amended Budget	Actual	Amount Variance Actual-Budget	Percent Over (Under) Budget
$ 55,639,300	$ 53,680,162	$ (1,959,138)	-3.52%
71,757,700	64,082,761	(7,674,939)	-10.70%
27,366,800	26,823,299	(543,501)	-1.99%
8,142,300	8,073,045	(69,255)	-0.85%
27,490,600	24,982,773	(2,507,827)	-9.12%
(890,800)	(969,671)	(78,871)	8.85%
(292,600)	(292,965)	(365)	0.12%
-	-	-	0.00%
-	-	-	0.00%
-	-	-	0.00%
1,161,500	-	(1,161,500)	-100.00%
$ 190,374,800	$ 176,379,404	$ (13,995,396)	-7.35%

Schedule of Revenue Requirement

Budget to Actual - Consolidated Water System
For the Year Ended June 30, 2018

The schedule presents a consolidated calculation of revenue requirements for both the GLWA regional water system and the DWSD local water system based upon budgets adopted by both entities. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. Individual schedules for both entities (the GLWA Regional Water System and the DWSD Local Water System) follow. Amounts shaded in grey indicate local system components.

	2018 Budget	2018 Actual [2]	Variance
Revenues			
Regional system:			
Regional system wholesale revenues - suburban wholesale	$ 310,019,800	$ 323,117,344	$ 13,097,544
Regional system wholesale revenues - Detroit customers	15,130,600	15,130,600	-
Total regional system revenues	325,150,400	338,247,944	13,097,544
DWSD local system revenues - Detroit customers	73,860,600	80,542,437	6,681,837
Miscellaneous revenue (local system)	4,750,000	3,441,349	(1,308,651)
Other operating revenue	-	64,200	64,200
Total operating revenue	403,761,000	422,295,930	18,534,930
Nonoperating revenue (regional system)	2,968,900	4,489,397	1,520,497
Total revenues	$ 406,729,900	$ 426,785,327	$ 20,055,427
Revenue Requirements [1]			
Operations and maintenance:			
Regional system wholesale expenses	121,562,600	121,562,600	-
Local system expenses	35,059,700	35,059,700	-
GRS pension allocable to regional system	6,048,000	6,058,800	10,800
GRS pension allocable to local system	4,272,000	4,281,600	9,600
Total operations and maintenance	166,942,300	166,962,700	20,400
Net revenues as defined by the MBO	239,787,600	259,822,627	20,035,027
Nonoperating activities:			
Debt service allocable to regional system	135,464,400	135,324,819	(139,581)
Debt service allocable to local system	37,486,700	35,419,463	(2,067,237)
GRS accelerated pension from regional system	6,268,300	6,489,754	221,454
GRS accelerated pension from local system	4,427,400	4,584,890	157,490
WRAP contribution from regional system	1,711,200	1,711,200	-
WRAP contribution from local system	448,200	448,200	-
ER&R fund contribution from regional system [3]	645,700	645,700	-
Contribution to operating reserves	1,097,900	1,097,900	-
Total nonoperating activities	187,549,800	185,721,927	(1,827,873)
Amount available for revenue financed capital	52,237,800	74,100,700	21,862,900

continued...

Schedule of Revenue Requirement

Budget to Actual - Consolidated Water System
For the Year Ended June 30, 2018

	2018 Budget	2018 Actual [2]	Variance
Reserve for revenue financed capital from net revenues			
Lease payment	$ 22,500,000	$ 22,500,000	$ -
Lease payment directed to debt service	(3,368,600)	(1,875,000)	1,493,600
Amount available for revenue financing capital			
And operating reserves regional system [3]	32,821,200	47,410,768	14,589,568
Local system revenues available for local system I&E	285,200	6,064,933	5,779,733
	52,237,800	74,100,700	21,862,900
Total revenue requirements	$ 406,729,900	$ 426,785,327	$ 20,055,427

concluded.

[1] Item is not considered an expense for accounting purposes but is for revenue requirement basis in establishing customer charges. Actual amounts are based on cash transfers made to the MBO bank accounts that must be funded by revenue.

[2] At the of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[3] Transfers are typically made in the subsequent year following the final analysis of year end results.

Schedule of Revenue Requirement

Budget to Actual - GLWA Regional Water System
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the GLWA regional water system based upon the budget adopted by the GLWA Board of Directors. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Water System Schedule of Revenue Requirements combines this schedule and the DWSD Local Water System Schedule of Revenue Requirements.

	2018 Budget	2018 Actual	Variance
Revenues			
Regional system:			
Regional system wholesale revenues - suburban wholesale	$ 310,019,800	$ 323,117,344	$ 13,097,544
Regional system wholesale revenues - Detroit customers	15,130,600	15,130,600	-
Total regional system revenues	325,150,400	338,247,944	13,097,544
Other operating revenue	-	64,200	64,200
Total operating revenue	325,150,400	338,312,144	13,161,744
Nonoperating revenue (regional system)	2,968,900	4,489,397	1,520,497
Total revenues	$ 328,119,300	$ 342,801,541	$ 14,682,241
Revenue requirements [1]			
Operations and maintenance:			
Regional system wholesale expenses	$ 121,562,600	$ 121,562,600	$ -
GRS pension allocable to regional system	6,048,000	6,058,800	10,800
Total operations and maintenance	127,610,600	127,621,400	10,800
Net revenues defined by the MBO	200,508,700	215,180,141	14,671,441
Nonoperating activities:			
Debt service allocable to regional system	135,464,400	135,324,819	(139,581)
GRS accelerated pension from regional system	6,268,300	6,489,754	221,454
WRAP contribution from regional system	1,711,200	1,711,200	-
ER&R fund contribution from regional system [2]	645,700	645,700	-
Contribution to operating reserves	1,097,900	1,097,900	-
Total nonoperating activities	145,187,500	145,269,373	81,873
Net revenues available for revenue financed capital	55,321,200	69,910,768	14,589,568
Lease payment			
Amount available for revenue financing capital	22,500,000	22,500,000	-
and operating reserves regional system [2]	32,821,200	47,410,768	14,589,568
Reserve for revenue financed capital	55,321,200	69,910,768	14,589,568
Total revenue requirements	$ 328,119,300	$ 342,801,541	$ 14,682,241

[1] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.

[2] Transfers are typically made in the subsequent year following the final analysis of yearend results.

Schedule of Revenue Requirement

Budget to Actual - DWSD Local Water System
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the DWSD local water system based upon the budget adopted by the DWSD Board of Water Commissioners. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Water System Schedule of Revenue Requirements combines this schedule and the GLWA regional Water System Schedule of Revenue Requirements. Amounts shaded in grey indicate local system components.

	2018 Budget [2]	2018 Actual [1]	Variance
Revenues			
Operating revenue:			
DWSD local system revenues - Detroit customers [3]	$ 73,860,600	$ 80,542,437	$ 6,681,837
Miscellaneous revenue (local system)	4,750,000	3,441,349	(1,308,651)
Total revenues	$ 78,610,600	$ 83,983,786	$ 5,373,186
Revenue requirements [4]			
Operations and maintenance:			
Local system expenses	$ 35,059,700	$ 35,059,700	$ -
GRS pension allocable to local system	4,272,000	4,281,600	9,600
Total operations and maintenance	39,331,700	39,341,300	9,600
Net revenues as defined by the MBO	39,278,900	44,642,486	5,363,586
Nonoperating activities:			
Debt service allocable to local system	37,486,700	35,419,463	(2,067,237)
GRS accelerated pension from local system	4,427,400	4,584,890	157,490
WRAP contribution from local system	448,200	448,200	-
Lease payment directed to debt service [5]	(3,368,600)	(1,875,000)	1,493,600
Revenues available for local system I&E	285,200	6,064,933	5,779,733
Total nonoperating activities	39,278,900	44,642,486	5,363,586
Total Revenue Requirements (Local System)	$ 78,610,600	$ 83,983,786	$ 5,373,186

[1] Reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.
[2] At the time of the issuance of the GLWA CAFR, DWSD's audited June 30, 2018 financial report had not been released. The amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.
[3] Net of bad debt expense.
[4] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.
[5] Lease Payment Allocation:

Total Lease Payment	22,500,000	22,500,000	-
Amount Directed to Debt Service	(3,368,600)	(1,875,000)	1,493,600
Balance to be Deposited to Local System I&E Account for Revenue Financed Capital	19,131,400	20,625,000	1,493,600

Schedule of Revenue Requirement

Budget to Actual - Consolidated Sewer System
For the Year Ended June 30, 2018

The schedule presents a consolidated calculation of revenue requirements for both the GLWA regional sewer system and the DWSD local sewer system based upon budgets adopted by both entities. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. Individual schedules for both entities (the GLWA Regional Sewer System and the DWSD Local Sewer System) follow. Amounts shaded in grey indicate local system components.

	2018 Budget	2018 Actual [2]	Variance
Revenues			
Regional system:			
Regional system wholesale revenues - suburban wholesale	$ 267,033,800	$ 268,978,831	$ 1,945,031
Regional system wholesale revenues - Detroit customers	178,969,200	178,969,200	-
Industrial waste control charges	14,457,700	14,334,979	(122,721)
Industrial surcharges	5,099,000	6,908,404	1,809,404
Total regional system revenues	465,559,700	469,191,414	3,631,714
DWSD local system revenues - Detroit customers	77,922,900	81,612,282	3,689,382
Miscellaneous revenue (local system)	5,000,000	5,089,230	89,230
Other operating revenue	-	4,391,145	4,391,145
Total operating revenue	548,482,600	560,284,071	11,801,471
Nonoperating revenue (regional system)	2,751,000	4,022,582	1,271,582
Total revenues	$ 551,233,600	$ 564,306,653	$ 13,073,053
Revenue requirements [1]			
Operations and maintenance:			
Regional system wholesale expenses	$ 191,079,400	$ 191,079,400	$ -
Local system expenses	60,402,000	60,517,992	115,992
GRS pension allocable to regional system	10,824,000	10,809,600	(14,400)
GRS pension allocable to local system	2,856,000	2,844,200	(11,800)
Total operations and maintenance	265,161,400	265,251,192	89,792
Net revenues as defined by the MBO	286,072,200	299,055,461	12,983,261
Nonoperating activities:			
Debt service allocable to regional system	207,615,500	202,965,506	(4,649,994)
Debt service allocable to local system	27,392,500	26,767,599	(624,901)
GRS accelerated pension from regional system	11,620,700	12,118,599	497,899
GRS accelerated pension from local system	3,066,800	3,197,100	130,300
WRAP contribution from regional system	2,391,800	2,391,800	-
WRAP contribution from local system	369,000	369,000	-
ER&R fund contribution from regional system [3]	813,600	813,600	-
Contribution to operating reserves	1,733,000	1,733,000	-
Total nonoperating activities	255,002,900	250,356,204	(4,646,696)
Amount available for revenue financed capital	31,069,300	48,699,257	17,629,957

continued...

Schedule of Revenue Requirement

Budget to Actual - Consolidated Sewer System
For the Year Ended June 30, 2018

	2018 Budget	2018 Actual	Variance
Reserve for revenue financed capital from net revenues			
Lease payment	$ 27,500,000	$ 27,500,000	$ -
Lease payment directed to debt service	(11,163,400)	(9,166,667)	1,996,733
Amount available for revenue financing capital and operating reserves regional system [3]	14,732,700	28,193,636	13,460,936
Local system revenue requirement variance	-	2,172,288	2,172,288
Total reserve for revenue financed capital	31,069,300	48,699,257	17,629,957
Total revenue requirements	$ 551,233,600	$ 564,306,653	$ 13,073,053

concluded.

[1] Item is not considered an expense for accounting purposes but is for revenue requirement basis in establishing customer charges. Actual amounts are based on cash transfers made to the MBO bank accounts that must be funded by revenue.

[2] At the of the issuance of the GLWA, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[3] Transfers are typically made in the subsequent year following the final analysis of year end results.

Schedule of Revenue Requirement

Budget to Actual - GLWA Regional Sewer System
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the GLWA regional sewer system based upon the budget adopted by the GLWA Board of Directors. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Sewer System Schedule of Revenue Requirements combines this schedule and the DWSD Local Sewer System Schedule of Revenue Requirements.

	2018 Budget	2018 Actual	Variance
Revenues			
Regional system:			
Regional system wholesale revenues - suburban wholesale	$ 267,033,800	$ 268,978,831	$ 1,945,031
Regional system wholesale revenues - Detroit customers	178,969,200	178,969,200	-
Industrial waste control charges - suburban customers	14,457,700	14,334,979	(122,721)
Industrial surcharges	5,099,000	6,908,404	1,809,404
Total regional system revenues	465,559,700	469,191,414	3,631,714
Other operating revenue	-	4,391,145	4,391,145
Total operating revenue	465,559,700	473,582,559	8,022,859
Nonoperating revenue (regional system)	2,751,000	4,022,582	1,271,582
Total revenues	$ 468,310,700	$ 477,605,141	$ 9,294,441
Revenue requirements			
Operations and maintenance:			
Regional system wholesale expenses	$ 191,079,400	$ 191,079,400	$ -
GRS pension allocable to regional system	10,824,000	10,809,600	(14,400)
Total operations and maintenance	201,903,400	201,889,000	(14,400)
Net revenues after operations and maintenance	266,407,300	275,716,141	9,308,841
Nonoperating activities:			
Debt service allocable to regional system	207,615,500	202,965,506	(4,649,994)
GRS accelerated pension from regional system	11,620,700	12,118,599	497,899
WRAP contribution from regional system	2,391,800	2,391,800	-
ER&R fund contribution from regional system [2]	813,600	813,600	-
Contribution to operating reserves	1,733,000	1,733,000	-
Total nonoperating activities	224,174,600	220,022,505	(4,152,095)
Amount available for revenue financed capital	42,232,700	55,693,636	13,460,936
Reserve for revenue financed capital from net revenues			
Lease payment to local system I&E account [1]	$ 27,500,000	$ 27,500,000	$ -
Net revenues available for revenue financing capital and operating reserves regional system [2]	14,732,700	28,193,636	13,460,936
Reserve for revenue financed capital both systems	42,232,700	55,693,636	13,460,936
Total revenue requirements	$ 468,310,700	$ 477,605,141	$ 9,294,441

[1] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.

[2] Transfers are typically made in the subsequent year following the final analysis of yearend results.

Schedule of Revenue Requirement

Budget to Actual - DWSD Local Sewer System
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the DWSD local sewer system based upon the budget adopted by the DWSD Board of Water Commissioners. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Sewer System Schedule of Revenue Requirements combines this schedule and the GLWA regional Sewer System Schedule of Revenue Requirements. Amounts shaded in grey indicate local system components.

	2018 Budget [1]	2018 Actual [2]	Variance
Revenues			
Operating revenue:			
DWSD local system revenues - Detroit customers [3]	$ 77,922,900	$ 81,612,282	$ 3,689,382
Miscellaneous revenue (local system)	5,000,000	5,089,230	89,230
Total revenues	$ 82,922,900	$ 86,701,512	$ 3,778,612
Revenue requirements [4]			
Operations and maintenance:			
Local system expenses	$ 60,402,000	$ 60,517,992	$ 115,992
GRS pension allocable to local system	2,856,000	2,844,200	(11,800)
Total operations and maintenance	63,258,000	63,362,192	104,192
Net revenues as defined by the MBO	19,664,900	23,339,320	3,674,420
Nonoperating activities:			
Debt service allocable to local system	27,392,500	26,767,599	(624,901)
GRS accelerated pension from local system	3,066,800	3,197,100	130,300
WRAP contribution from local system	369,000	369,000	-
Lease payment directed to debt service [5]	(11,163,400)	(9,166,667)	1,996,733
Revenue requirement variance	-	2,172,288	2,172,288
Total nonoperating activities	19,664,900	23,339,320	3,674,420
Total Revenue Requirements (Local System)	$ 82,922,900	$ 86,701,512	$ 3,778,612

[1] Reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.
[2] At the time of the issuance of the GLWA CAFR, DWSD's audited June 30, 2018 financial report had not been released. The amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.
[3] Net of bad debt expense.
[4] Item is not considered an expense for accounting purposes but is for revenue requirement basis in establishing customer charges. Actual amounts are based on cash transfers made to the MBO bank accounts that must be funded by revenue.
[5] Lease Payment Allocation:

Total Lease Payment	27,500,000	27,500,000	-
Amount Directed to Debt Service	(11,163,400)	(9,166,667)	1,996,733
Balance to be Deposited to Local System I&E Account for Revenue Financed Capital	16,336,600	18,333,333	1,996,733

Schedule of Days Cash - Liquidity

June 30, 2018

	2018	2017	2016*
Water fund			
Cash and investments -			
Unrestricted	$ 317,089,746	$ 267,335,558	$ 167,292,572
Operating expense			
Operating expense	$ 254,602,752	$ 245,868,861	$ 120,841,204
Less: depreciation	(143,991,815)	(144,137,912)	(71,295,545)
Less: amortization of intangible asset - raw water rights	(2,080,554)	-	-
Net operating expense	$ 108,530,383	$ 101,730,949	$ 49,545,659
Operating expense per day (365 days)	$ 297,344	$ 278,715	$ 273,733
Days cash			
Number of days cash	1,066	959	611
Sewage disposal fund			
Cash and investments -			
Unrestricted	$ 208,563,268	$ 205,179,312	$ 188,063,375
Operating expense			
Operating expense	$ 363,629,987	$ 336,946,731	$ 170,401,050
Less: depreciation	(187,250,583)	(185,628,465)	(86,021,029)
Net operating expense	$ 176,379,404	$ 151,318,266	$ 84,380,021
Operating expense per day (365 days)	$ 483,231	$ 414,571	$ 466,188
Days cash			
Number of days cash	432	495	403
Combined			
Cash and investments -			
Unrestricted	$ 525,653,014	$ 472,514,870	$ 355,355,947
Operating expense			
Operating expense	$ 618,232,739	$ 582,815,592	$ 291,242,254
Less: depreciation	(331,242,398)	(329,766,377)	(157,316,574)
Less: amortization of intangible asset - raw water rights	(2,080,554)	-	-
Net operating expense	$ 284,909,787	$ 253,049,215	$ 133,925,680
Operating expense per day (365 days)	$ 780,575	$ 693,286	$ 739,921
Days cash			
Number of days cash	673	682	480

*GLWA assumed operations on January 1, 2016. Data for 2016 includes six months of operation under GLWA. Operating expense per day for 2016 is computed using 181 days (six months of operations).

Schedule of Interfund Receivables and Payables

For the Year Ended June 30, 2018

Interfund balances result from the time lag between the dates interfund goods and services provided or reimbursable expenditures occur and the payment between funds are made. Interfund balances for the year ended June 30, 2018 consisted of the following:

	Due From Other Funds			
	Operating	I&E	Construction	Total
Due to Other Funds				
Water	$ 2,091,163	$ -	$ 1,356,764	$ 3,447,927
Sewer	-	317,866	12,427	330,293
Total	$ 2,091,163	$ 317,866	$ 1,369,191	$ 3,778,220

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STATISTICAL SECTION

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GREAT LAKES WATER AUTHORITY

Statistical Section Table of Contents

The objective of the statistical section is to provide financial statement users with additional historical perspective, context and detail to assist in using the information in the financial statements, notes to financial statements and required supplementary information to understand and assess the Authority's economic condition.

The statistical section information is presented in the following categories:

		Page
Financial Trends Schedules 1 through 3	Financial trends information is intended to show how the Authority's financial position has changed over time.	109
Revenue Capacity Schedule 4	Revenue capacity information is intended to show the factors affecting the Authority's ability to generate its own-source revenue.	119
Debt Capacity Information Schedules 5 through 9	Debt capacity information is intended to show the Authority's debt burden and its ability to issue additional debt.	120
Demographic and Economic Schedules 10 through 15	Demographic and economic information is intended to show the socioeconomic environment within which the Authority operates.	131
Operating Information Schedule 16 through 19	Operating information is intended to show contextual information about operations and resources to provide understanding and assessing the Authority's economic condition.	140

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GREAT LAKES WATER AUTHORITY

Schedule 1

UNAUDITED

Net Position by Component - Business-type Activities

	2018	2017	2016*
Water fund			
Net investment in capital assets	$ 60,799,635	$ 134,919,107	$ 400,187,482
Restricted for debt service	23,239,368	26,194,280	69,797,836
Restricted for capital acquisition	140,732,216	172,974,994	-
Restricted for payment assistance program	2,462,214	2,218,373	977,278
Unrestricted (deficit)	(287,668,794)	(372,780,904)	(475,054,191)
	(60,435,361)	(36,474,150)	(4,091,595)
Sewage disposal fund			
Net investment in capital assets	289,946,091	393,956,399	451,547,037
Restricted for debt service	101,996,536	107,931,677	108,742,193
Restricted for capital acquisition	102,506,361	150,930,508	164,326,618
Restricted for payment assistance program	3,308,896	3,117,744	-
Unrestricted (deficit)	(616,077,287)	(722,297,171)	(735,208,133)
	(118,319,403)	(66,360,843)	(10,592,285)
Business-type activities			
Net investment in capital assets	350,745,726	528,875,506	851,734,519
Restricted for debt service	125,235,904	134,125,957	178,540,029
Restricted for capital acquisition	243,238,577	323,905,502	164,326,618
Restricted for payment assistance program	5,771,110	5,336,117	977,278
Unrestricted (deficit)	(903,746,081)	(1,095,078,075)	(1,210,262,324)
Total business-type activities net position	$ (178,754,764)	$ (102,834,993)	$ (14,683,880)

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 2
UNAUDITED

Comparative Schedule of Net Position - Business-type Activities
June 30, 2018

	Business-type Activities		
	2018	2017	2016
Assets			
Current assets:			
Cash and cash equivalents	$ 509,141,777	$ 470,231,842	$ 311,735,186
Restricted cash and cash equivalents	105,929,392	132,967,081	134,210,268
Restricted cash for the benefit of DWSD	8,418,827	288,378	62,078
Investments	16,511,237	2,283,028	43,620,761
Restricted investments	33,025,340	32,541,021	56,661,000
Receivables:			
Billed	88,712,190	88,694,341	85,676,104
Unbilled	54,429,817	53,818,603	55,345,336
Other	3,728,886	3,158,350	114,648,035
Allowance for doubtful accounts	(39,084,816)	(35,352,009)	(124,009,242)
Due from other governments	47,927,860	50,789,041	107,688,300
Due from other funds	3,778,220	-	65,971
Contractual obligation receivable, current portion	24,813,886	23,339,242	11,929,259
Loan receivable - DWSD	9,367,355		
Prepaid items and other assets	4,949,631	3,526,568	2,591,049
Inventories	8,471,626	8,509,454	9,984,063
Total current assets	880,121,228	834,794,940	810,208,168
Noncurrent assets:			
Restricted cash and cash equivalents	48,263,059	306,318,331	160,949,722
Restricted investments	293,697,988	101,708,122	105,028,079
Contractual obligation receivable	812,613,943	830,432,680	832,571,741
Loan receivable - DWSD	19,932,645		
Prepaid lease	25,000,000	25,000,000	-
Assets not subject to depreciation	706,046,995	730,471,792	711,434,348
Capital assets being depreciated, net	3,984,216,865	4,178,315,045	4,427,945,555
Intangible asset - raw water rights, net	104,919,365	-	-
Prepaid insurance on debt	29,933,631	32,694,221	48,653,581
Total noncurrent assets	6,024,624,491	6,204,940,191	6,286,583,026
Total assets	6,904,745,719	7,039,735,131	7,096,791,194
Deferred outflows of resources			
Deferred charge on refunding	280,975,963	297,646,441	328,659,457
Deferred pension amounts	52,015,636	59,954,478	37,997,043
Total deferred outflows of resources	332,991,599	357,600,919	366,656,500

continued...

GREAT LAKES WATER AUTHORITY

Schedule 2
UNAUDITED

Comparative Schedule of Net Position - Business-type Activities
June 30, 2018

	Business-type Activities		
	2018	2017	2016
Liabilities			
Current liabilities:			
Accounts and contracts payable	$ 67,832,136	$ 64,298,400	$ 85,626,614
Accrued salaries, wages and benefits	4,734,956	3,190,038	2,887,280
Other accrued liabilities	12,679,692	2,252,616	1,550,254
Due to other governments	11,983,407	61,242,386	37,893,903
Due to other funds	3,778,220	-	65,971
Interest payable	80,431,318	80,340,520	81,139,013
Current portion of:			
Long-term debt	81,756,050	89,314,212	96,552,356
Leases payable	10,698,835	10,262,609	9,844,169
Lease obligation - raw water rights	2,999,458	-	-
Obligation payable	545,213	519,251	494,524
Accrued compensated absences	2,929,412	2,837,148	2,239,376
Accrued workers' compensation	228,239	25,000	785,953
Claims and judgments	2,529,392	3,852,062	4,763,944
Total current liabilities	283,126,328	318,134,242	323,843,357
Noncurrent liabilities:			
Long-term debt	5,714,095,283	5,842,482,161	5,876,115,822
Long-term leases payable	936,641,935	947,340,770	957,603,379
Lease obligation - raw water rights	103,241,118	-	-
Obligation payable	55,555,887	56,101,100	56,620,351
Accrued compensated absences	2,174,506	2,288,125	3,511,934
Accrued workers' compensation	75,000	225,000	7,953,474
Claims and judgments	7,550,000	262,500	25,914,350
Other noncurrent liabilities	8,638,011	8,565,277	8,622,785
Net pension liability	178,961,907	194,075,547	170,229,438
Total noncurrent liabilities	7,006,933,647	7,051,340,480	7,106,571,533
Total liabilities	7,290,059,975	7,369,474,722	7,430,414,890
Deferred inflows of resources			
Deferred amounts for swap terminations	270,150	299,461	4,373,886
Deferred gain on refunding	105,907,267	112,080,430	-
Deferred pension amounts	20,254,690	18,316,430	43,342,798
Total deferred inflows of resources	126,432,107	130,696,321	47,716,684
Net position			
Net investment in capital assets	350,745,726	528,875,506	851,734,519
Restricted for debt service	125,235,904	134,125,957	178,540,029
Restricted for capital acquisition	243,238,577	323,905,502	164,326,618
Restricted for payment assistance program	5,771,110	5,336,117	977,278
Unrestricted deficit	(903,746,081)	(1,095,078,075)	(1,210,262,324)
Total net position	$ (178,754,764)	$ (102,834,993)	$ (14,683,880)

concluded.

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Schedule 2a
UNAUDITED

Comparative Schedule of Net Position - Water Fund
June 30, 2018

	Water Fund		
	2018	2017	2016
Assets			
Current assets:			
Cash and cash equivalents	$ 310,085,221	$ 266,483,138	$ 155,712,891
Restricted cash and cash equivalents	51,097,342	60,753,268	53,028,844
Restricted cash for the benefit of DWSD	8,418,827	288,378	10,430
Investments	7,004,525	852,420	11,579,681
Restricted investments	1,234,954	1,169,187	27,818,000
Receivables:			
Billed	38,272,740	36,459,563	37,629,170
Unbilled	29,229,709	29,539,433	32,307,945
Other	5,850	1,300	21,899,046
Allowance for doubtful accounts	(6,221,815)	(4,941,777)	(25,040,612)
Due from other governments	23,588,754	21,327,713	41,486,157
Due from other funds	330,293	-	-
Contractual obligation receivable, current portion	13,560,086	12,076,942	6,851,584
Prepaid items and other assets	3,265,972	2,437,047	2,183,690
Inventories	-	-	-
Total current assets	479,872,458	426,446,612	365,466,826
Noncurrent assets:			
Restricted cash and cash equivalents	18,261,706	177,939,494	5,460,942
Restricted investments	150,436,225	20,530,374	42,841,345
Contractual obligation receivable	477,039,443	483,604,380	466,317,666
Prepaid lease	11,250,000	11,250,000	-
Assets not subject to depreciation	434,684,895	452,185,674	415,558,090
Capital assets being depreciated, net	1,499,118,693	1,587,291,603	1,728,054,410
Intangible asset - raw water rights, net	104,919,365	-	-
Prepaid insurance on debt	13,002,376	14,112,324	20,831,496
Total noncurrent assets	2,708,712,703	2,746,913,849	2,679,063,949
Total assets	3,188,585,161	3,173,360,461	3,044,530,775
Deferred outflows of resources			
Deferred charge on refunding	94,431,823	99,294,499	116,511,949
Deferred pension amounts	18,645,719	21,491,506	13,620,562
Total deferred outflows of resources	113,077,542	120,786,005	130,132,511

continued...

GREAT LAKES WATER AUTHORITY

Schedule 2a
UNAUDITED

Comparative Schedule of Net Position - Water Fund
June 30, 2018

	Water Fund		
	2018	2017	2016
Liabilities			
Current liabilities:			
Accounts and contracts payable	$ 33,754,534	$ 36,751,842	$ 49,474,527
Accrued salaries, wages and benefits	4,734,956	3,190,038	2,887,280
Other accrued liabilities	12,679,692	1,353,816	875,796
Due to other governments	11,935,868	25,393,813	13,668,890
Due to other funds	3,447,927	-	65,971
Interest payable	39,322,324	39,329,322	37,226,125
Current portion of:			
Long-term debt	20,569,843	23,393,905	35,650,167
Leases payable	4,814,476	4,618,174	4,429,876
Lease obligation - raw water rights	2,999,458	-	-
Obligation payable	167,794	159,803	152,193
Accrued compensated absences	2,212,326	2,157,888	1,784,746
Accrued workers' compensation	228,239	25,000	395,788
Claims and judgments	2,195,000	-	4,494,694
Total current liabilities	139,062,437	136,373,601	151,106,053
Noncurrent liabilities:			
Long-term debt	2,545,529,255	2,606,465,431	2,488,824,632
Long-term leases payable	421,488,871	426,303,346	430,921,520
Lease obligation - raw water rights	103,241,118	-	-
Obligation payable	17,097,709	17,265,503	17,425,306
Accrued compensated absences	2,174,506	2,288,125	3,511,934
Accrued workers' compensation	75,000	225,000	3,562,536
Claims and judgments	50,000	75,000	-
Other noncurrent liabilities	2,634,471	2,582,076	2,710,092
Net pension liability	64,151,352	69,569,044	61,021,079
Total noncurrent liabilities	3,156,442,282	3,124,773,525	3,007,977,099
Total liabilities	3,295,504,719	3,261,147,126	3,159,083,152
Deferred inflows of resources			
Deferred amounts for swap terminations	80,342	85,068	4,134,908
Deferred gain on refunding	59,252,431	62,822,646	-
Deferred pension amounts	7,260,572	6,565,776	15,536,821
Total deferred inflows of resources	66,593,345	69,473,490	19,671,729
Net position			
Net investment in capital assets	60,799,635	134,919,107	400,187,482
Restricted for debt service	23,239,368	26,194,280	69,797,836
Restricted for capital acquisition	140,732,216	172,974,994	-
Restricted for payment assistance program	2,462,214	2,218,373	977,278
Unrestricted deficit	(287,668,794)	(372,780,904)	(475,054,191)
Total net position	$ (60,435,361)	$ (36,474,150)	$ (4,091,595)

concluded.

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Schedule 2b
UNAUDITED

Comparative Schedule of Net Position - Sewage Disposal Fund
June 30, 2018

	Sewage Disposal Fund		
	2018	2017	2016
Assets			
Current assets:			
Cash and cash equivalents	$ 199,056,556	$ 203,748,704	$ 156,022,295
Restricted cash and cash equivalents	54,832,050	72,213,813	81,181,424
Restricted cash for the benefit of DWSD	-	-	51,648
Investments	9,506,712	1,430,608	32,041,080
Restricted investments	31,790,386	31,371,834	28,843,000
Receivables:			
Billed	50,439,450	52,234,778	48,046,934
Unbilled	25,200,108	24,279,170	23,037,391
Other	3,723,036	3,157,050	92,748,989
Allowance for doubtful accounts	(32,863,001)	(30,410,232)	(98,968,630)
Due from other governments	24,339,106	29,461,328	66,202,143
Due from other funds	3,447,927	-	65,971
Contractual obligation receivable, current portion	11,253,800	11,262,300	5,077,675
Loan receivable - DWSD	9,367,355	-	-
Prepaid items and other assets	1,683,659	1,089,521	407,359
Inventories	8,471,626	8,509,454	9,984,063
Total current assets	400,248,770	408,348,328	444,741,342
Noncurrent assets:			
Restricted cash and cash equivalents	30,001,353	128,378,837	155,488,780
Restricted investments	143,261,763	81,177,748	62,186,734
Contractual obligation receivable	335,574,500	346,828,300	366,254,075
Loan receivable - DWSD	19,932,645		
Prepaid lease	13,750,000	13,750,000	-
Assets not subject to depreciation	271,362,100	278,286,118	295,876,258
Capital assets being depreciated, net	2,485,098,172	2,591,023,442	2,699,891,145
Prepaid insurance on debt	16,931,255	18,581,897	27,822,085
Total noncurrent assets	3,315,911,788	3,458,026,342	3,607,519,077
Total assets	3,716,160,558	3,866,374,670	4,052,260,419
Deferred outflows of resources			
Deferred charge on refunding	186,544,140	198,351,942	212,147,508
Deferred pension amounts	33,369,917	38,462,972	24,376,481
Total deferred outflows of resources	219,914,057	236,814,914	236,523,989

continued...

GREAT LAKES WATER AUTHORITY

Schedule 2b
UNAUDITED

Comparative Schedule of Net Position - Sewage Disposal Fund
June 30, 2018

	Sewage Disposal Fund		
	2018	2017	2016
Liabilities			
Current liabilities:			
Accounts and contracts payable	$ 34,077,602	$ 27,546,558	$ 36,152,087
Accrued salaries, wages and benefits	-	-	-
Other accrued liabilities	-	898,800	674,458
Due to other governments	47,539	35,848,573	24,225,013
Due to other funds	330,293	-	-
Interest payable	41,108,994	41,011,198	43,912,888
Current portion of:			
Long-term debt	61,186,207	65,920,307	60,902,189
Leases payable	5,884,359	5,644,435	5,414,293
Obligation payable	377,419	359,448	342,331
Accrued compensated absences	717,086	679,260	454,630
Accrued workers' compensation	-	-	390,165
Claims and judgments	334,392	3,852,062	269,250
Total current liabilities	144,063,891	181,760,641	172,737,304
Noncurrent liabilities:			
Long-term debt	3,168,566,028	3,236,016,730	3,387,291,190
Long-term leases payable	515,153,064	521,037,424	526,681,859
Obligation payable	38,458,178	38,835,597	39,195,045
Accrued compensated absences	-	-	-
Accrued workers' compensation	-	-	4,390,938
Claims and judgments	7,500,000	187,500	25,914,350
Other noncurrent liabilities	6,003,540	5,983,201	5,912,693
Net pension liability	114,810,555	124,506,503	109,208,359
Total noncurrent liabilities	3,850,491,365	3,926,566,955	4,098,594,434
Total liabilities	3,994,555,256	4,108,327,596	4,271,331,738
Deferred inflows of resources			
Deferred amounts for swap terminations	189,808	214,393	238,978
Deferred gain on refunding	46,654,836	49,257,784	-
Deferred pension amounts	12,994,118	11,750,654	27,805,977
Total deferred inflows of resources	59,838,762	61,222,831	28,044,955
Net position			
Net investment in capital assets	289,946,091	393,956,399	451,547,037
Restricted for debt service	101,996,536	107,931,677	108,742,193
Restricted for capital acquisition	102,506,361	150,930,508	164,326,618
Restricted for payment assistance program	3,308,896	3,117,744	-
Unrestricted deficit	(616,077,287)	(722,297,171)	(735,208,133)
Total net position	$ (118,319,403)	$ (66,360,843)	$ (10,592,285)

concluded.

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Schedule 3

UNAUDITED

Changes in Net Position - Business-type Activities

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	$ 592,096,175	$ 594,426,876	$ 281,883,522
Industrial waste charges	14,334,979	14,381,106	6,910,192
Pollutant surcharges	6,908,404	5,206,294	2,423,910
Local system charges	194,099,800	202,794,400	102,660,400
Bad debt recovery	-	40,172,155	-
Other revenues	4,455,345	576,195	4,252,477
Total operating revenues	811,894,703	857,557,026	398,130,501
Operating expenses			
Personnel	95,525,457	86,156,304	21,590,763
Contractual services	99,877,310	90,135,859	17,179,869
Utilities	53,694,380	55,661,469	25,037,499
Chemicals	12,877,813	14,765,181	6,451,484
Supplies and other expenses	34,526,388	20,162,690	17,903,355
Capital program allocation	(1,683,450)	(2,128,078)	-
Shared services allocation	(9,908,111)	(11,704,210)	-
Centralized services	-	-	35,228,282
Administrative services	-	-	10,534,428
Depreciation	331,242,398	329,766,377	157,316,574
Amortization of intagible asset - raw water rights	2,080,554	-	-
Total operating expenses	618,232,739	582,815,592	291,242,254
Operating income	193,661,964	274,741,434	106,888,247
Nonoperating revenues (expenses)			
Earnings on investments	11,395,785	4,042,790	1,481,398
Interest on obligations receivable	38,856,520	42,332,428	21,062,500
Interest expense	(300,395,306)	(291,592,097)	(148,447,442)
Costs of issuance and amortization of debt related items	8,684,285	(14,937,182)	2,055,724
Legacy pension expense	(24,922,162)	(7,021,006)	-
WRAP (Water Residential Assistance Program)	(3,755,534)	(2,127,333)	-
Other	(1,254,350)	661,734	-
Gain (loss) on disposal of capital assets	2,463,478	(250,826)	275,693
Loss on impairment of capital assets	(654,451)	(31,499)	-
Total nonoperating expenses	(269,581,735)	(268,922,991)	(123,572,127)
Income (loss) before contributions and special item	(75,919,771)	5,818,443	(16,683,880)
Capital contributions	-	320,707	2,000,000
Special item - memorandum of understanding with DWSD	-	(94,290,263)	-
Change in net position	(75,919,771)	(88,151,113)	(14,683,880)
Net position (deficit), beginning of year	(102,834,993)	(14,683,880)	-
Net position (deficit), end of year	$ (178,754,764)	$ (102,834,993)	$ (14,683,880)

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 3a

UNAUDITED

Changes in Net Position - Water Fund

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	$ 323,117,344	$ 331,115,131	$ 160,777,169
Local system charges	15,130,600	15,490,300	6,833,500
Bad debt recovery	-	5,107,125	-
Other revenues	64,200	37,388	54,863
Total operating revenues	338,312,144	351,749,944	167,665,532
Operating expenses			
Personnel	41,845,295	38,261,393	8,301,022
Contractual services	35,794,549	34,257,419	3,304,113
Utilities	26,871,081	28,469,603	12,368,557
Chemicals	4,804,768	5,340,753	2,444,543
Supplies and other expenses	9,543,615	7,982,562	1,440,644
Capital program allocation	(713,779)	(977,762)	-
Shared services allocation	(9,615,146)	(11,603,019)	-
Centralized services	-	-	18,494,851
Administrative services	-	-	3,191,929
Depreciation	143,991,815	144,137,912	71,295,545
Amortization of intagible asset - raw water rights	2,080,554	-	-
Total operating expenses	254,602,752	245,868,861	120,841,204
Operating income	83,709,392	105,881,083	46,824,328
Nonoperating revenues (expenses)			
Earnings on investments	6,129,530	1,832,918	392,031
Interest on obligations receivable	23,351,220	25,269,750	12,231,250
Interest expense	(139,343,204)	(132,434,945)	(65,958,095)
Costs of issuance and amortization of debt related items	13,837,585	2,403,018	2,418,891
Legacy pension expense	(8,933,691)	(2,516,776)	-
WRAP (Water Residential Assistance Program)	(1,506,554)	(884,327)	-
Other	(544,813)	1,117,704	-
Gain (loss) on disposal of capital assets	(6,225)	(207,900)	-
Loss on impairment of capital assets	(654,451)	(31,499)	-
Total nonoperating expenses	(107,670,603)	(105,452,057)	(50,915,923)
Income (loss) before special item	(23,961,211)	429,026	(4,091,595)
Special item - memorandum of understanding with DWSD	-	(32,811,581)	-
Change in net position	(23,961,211)	(32,382,555)	(4,091,595)
Net position (deficit), beginning of year	(36,474,150)	(4,091,595)	-
Net position (deficit), end of year	$ (60,435,361)	$ (36,474,150)	$ (4,091,595)

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 3b

UNAUDITED

Changes in Net Position - Sewage Disposal Fund

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	$ 268,978,831	$ 263,311,745	$ 121,106,353
Industrial waste charges	14,334,979	14,381,106	6,910,192
Pollutant surcharges	6,908,404	5,206,294	2,423,910
Local system charges	178,969,200	187,304,100	95,826,900
Bad debt recovery	-	35,065,030	-
Other revenues	4,391,145	538,807	4,197,614
Total operating revenues	473,582,559	505,807,082	230,464,969
Operating expenses			
Personnel	53,680,162	47,894,911	13,289,741
Contractual services	64,082,761	55,878,440	13,875,756
Utilities	26,823,299	27,191,866	12,668,942
Chemicals	8,073,045	9,424,428	4,006,941
Supplies and other expenses	24,982,773	12,180,128	16,462,711
Capital program allocation	(969,671)	(1,150,316)	-
Shared services allocation	(292,965)	(101,191)	-
Centralized services	-	-	16,733,431
Administrative services	-	-	7,342,499
Depreciation	187,250,583	185,628,465	86,021,029
Total operating expenses	363,629,987	336,946,731	170,401,050
Operating income	109,952,572	168,860,351	60,063,919
Nonoperating revenues (expenses)			
Earnings on investments	5,266,255	2,209,872	1,089,367
Interest on obligations receivable	15,505,300	17,062,678	8,831,250
Interest expense	(161,052,102)	(159,157,152)	(82,489,347)
Costs of issuance and amortization of debt related items	(5,153,300)	(17,340,200)	(363,167)
Legacy pension expense	(15,988,471)	(4,504,230)	-
WRAP (Water Residential Assistance Program)	(2,248,980)	(1,243,006)	-
Other	(709,537)	(455,970)	-
Gain (loss) on disposal of capital assets	2,469,703	(42,926)	275,693
Total nonoperating expenses	(161,911,132)	(163,470,934)	(72,656,204)
Income (loss) before contributions and special item	(51,958,560)	5,389,417	(12,592,285)
Capital contributions	-	320,707	2,000,000
Special item - memorandum of understanding with DWSD	-	(61,478,682)	-
Change in net position	(51,958,560)	(55,768,558)	(10,592,285)
Net position (deficit), beginning of year	(66,360,843)	(10,592,285)	-
Net position (deficit), end of year	$ (118,319,403)	$ (66,360,843)	$ (10,592,285)

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 4

UNAUDITED

Operating Revenues and Charge Increases

Last Three Years*

	2018	2017	2016 [3]
Water fund			
Operating revenues:			
Wholesale customer charges	$ 323,117,344	$ 331,115,131	$ 160,777,169
Local system charges	15,130,600	15,490,300	6,833,500
Bad debt recovery	-	5,107,125	-
Other revenues	64,200	37,388	54,863
Total operating revenues	$ 338,312,144	$ 351,749,944	$ 167,665,532
Change in budgeted revenue requirement	-0.9%	4.0%	4.0%
Average annual charge increase all customers	1.9%	4.5%	9.8%
Average annual charge increase wholesale customers	2.0%	4.3%	11.3%
Detroit retail rate increase [2]	1.7%	3.3%	5.3%
Number of wholesale customers [1]	87	88	85
Sewage disposal fund			
Operating Revenues:			
Wholesale customer charges	$ 268,978,831	$ 263,311,745	$ 121,106,353
Industrial waste and surcharges	21,243,383	19,587,400	9,334,102
Local system charges	178,969,200	187,304,100	95,826,900
Bad debt recovery	-	35,065,030	-
Other revenues	4,391,145	538,807	4,197,614
Total operating revenues	$ 473,582,559	$ 505,807,082	$ 230,464,969
Change in budgeted revenue requirement	0.3%	4.0%	4.0%
Average annual charge increase all customers	-0.6%	8.3%	1.5%
Average annual charge increase wholesale customers	1.9%	4.9%	-1.1%
Detroit retail rate increase [2]	1.7%	3.5%	8.6%
Number of wholesale customers [1]	18	18	21

* GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

[1] Does not include the City of Detroit.
[2] This is the rate increase the City of Detroit Water and Sewerage charges the local customers.
[3] Percentage increase based on previous budget of Detroit Water and Sewerage Department.

Source: Charge increases Great Lakes Water Authority minutes 6/7/17
Source: Charge increases Detroit retail rate Board of Water Commissioners minutes 6/21/17
Source: Great Lakes Water Authority Financial Services Area and The Foster Group

GREAT LAKES WATER AUTHORITY

Schedule 5

UNAUDITED

Ratios of Outstanding Debt by Type

	2018	2017	2016*
Water fund			
Revenue bonds [1]	$ 2,540,663,196	$ 2,612,607,101	$ 2,507,091,038
State revolving loands	25,435,902	17,252,235	17,383,761
Total water fund	2,566,099,098	2,629,859,336	2,524,474,799
Sewage disposal fund			
Revenue bonds [1]	2,739,090,653	2,797,168,264	2,922,089,599
Capital appreciation bonds [1]	14,984,042	19,501,737	19,668,138
State revolving loans	475,677,540	485,267,036	506,435,742
Total sewage disposal fund	3,229,752,235	3,301,937,037	3,448,193,479
Business-type activities			
Revenue bonds [1]	5,279,753,849	5,409,775,365	5,429,180,637
Capital appreciation bonds [1]	14,984,042	19,501,737	19,668,138
State revolving loans	501,113,442	502,519,271	523,819,503
Total business-type activities debt	$ 5,795,851,333	$ 5,931,796,373	$ 5,972,668,278
Total taxable value **	n/a	n/a	n/a
Total population served[2]:			
Water	3,800,000	3,800,000	3,800,000
Sewage disposal	2,800,000	2,800,000	2,800,000
Total debt per capita:			
Water	$ 675	$ 692	$ 664
Sewage disposal	1,153	1,179	1,231
Per capital income [3]	51,493	50,863	48,692
Total debt as a percentage of income:			
Water	1.31%	1.36%	1.36%
Sewage disposal	2.24%	2.32%	2.53%

[1] Amounts are reported net of premiums and discounts.
[2] Source: Estimated based on data from Southeast Michigan Council of Goverments (SEMCOG).
[3] Source: FRED Economic Data, St. Louis Fed

* GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

** GLWA does not levy property taxes; therefore, presentation of taxable values and the ratio of total debt to taxable value is not applicable.

Source: Great Lakes Water Authority Financial Services Area

Further details regarding the Authority's debt can be found in the notes to the financial statements.

GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
Water Supply System Revenue Bonds			
Senior Lien Bonds			
Water Supply System Revenue Senior Lien Bonds, Series 2003A	$ 234,805,000	$ 100,000	$ 100,000
Water Supply System Revenue Senior Lien Bonds, Series 2005B	194,900,000	1,870,000	1,870,000
Water Supply System Revenue Senior Lien Bonds, Series 2006A	280,000,000	100,000	100,000
Water Supply System Revenue Senior Lien Bonds, Series 2011A	379,590,000	293,970,000	293,970,000
Water Supply System Revenue Senior Lien Bonds, Series 2011B	17,195,000	4,450,000	4,450,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2011C	103,890,000	75,145,000	75,145,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-1	206,540,000	189,875,000	189,875,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-2	188,455,000	188,455,000	188,455,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-3	62,700,000	23,290,000	23,290,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-4	307,645,000	209,360,000	209,360,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-5	9,270,000	9,270,000	9,270,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2015D-1	89,430,000	88,925,000	88,925,000
Water Supply System Revenue Senior Lien Bonds, Series 2016A	88,000,000	88,000,000	88,000,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2016C	443,930,000	443,930,000	443,930,000
	2,606,350,000	1,616,740,000	1,616,740,000
Second Lien Bonds			
Water Supply System Revenue Refunding Second Lien Bonds, Series 2001C	190,405,000	179,150,000	179,150,000
Water Supply System Revenue Second Lien Bonds, Series 2003B	172,945,000	100,000	100,000
Water Supply System Revenue Second Lien Bonds, Series 2006B	120,000,000	300,000	300,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2014D-6	65,425,000	65,425,000	65,425,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2015D-2	37,235,000	37,235,000	37,235,000
Water Supply System Revenue Second Lien Bonds, Series 2016B	163,830,000	163,830,000	163,830,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2016D	222,045,000	222,045,000	222,045,000
	971,885,000	668,085,000	668,085,000
SRF Junior Lien Bonds			
Water Supply System Revenue Bonds, Series 2005 SRF-1	13,805,164	6,710,164	6,710,164
Water Supply System Revenue Bonds, Series 2005 SRF-2	8,891,730	4,221,730	4,221,730
Water Supply System Revenue Bonds, Series 2006 SRF-1	5,180,926	2,495,926	2,495,926
Water Supply System Revenue Bonds, Series 2008 SRF-1	2,590,941	1,120,941	1,120,941
Water Supply System Revenue Bonds, Series 2016 SRF-1	9,605,000	7,533,598	9,605,000
Water Supply System Revenue Bonds, Series 2016 SRF-2	4,180,000	3,353,543	4,180,000
Water Supply System Revenue Bonds, Series 2017 SRF-1	6,675,000	-	6,675,000
	50,928,761	25,435,902	35,008,761
Total water supply system revenue bonds	$ 3,629,163,761	$ 2,310,260,902	$ 2,319,833,761

continued...

GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
Sewage Disposal System Revenue Bonds			
Senior Lien Bonds (revenue and SRF)			
Sewage Disposal System Revenue Bonds (Senior), Series 1997B SRF	$ 5,430,174	$ 330,000	$ 330,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998A	67,615,000	18,485,000	18,485,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998B	67,520,000	18,260,000	18,260,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-1	21,475,000	2,650,000	2,650,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-2	46,000,000	13,735,000	13,735,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-3	31,030,000	5,700,000	5,700,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-4	40,655,000	7,465,000	7,465,000
Sewage Disposal System Revenue Bonds, Series 1999A	33,510,118	17,250,000	17,250,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C-1	154,870,000	41,515,000	41,515,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C-2	122,905,000	107,425,000	107,425,000
Sewage Disposal System Senior Lien Revenue & Revenue Refunding Bonds, Series 2003A	599,380,000	415,000	415,000
Sewage Disposal System Senior Lien Revenue Bonds, Series 2003B	150,000,000	100,000	100,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2004A	101,435,000	35,010,000	35,010,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2006D	370,000,000	239,475,000	239,475,000
Sewage Disposal System Revenue & Revenue Refunding Senior Lien Bonds, Series 2012A	659,780,000	524,925,000	524,925,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-1	123,220,000	123,220,000	123,220,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-2	27,470,000	27,470,000	27,470,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-3	446,170,000	446,170,000	446,170,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-5	95,165,000	34,430,000	34,430,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-6	143,880,000	88,900,000	88,900,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2016B	126,105,000	126,105,000	126,105,000
	3,433,615,292	1,879,035,000	1,879,035,000
Second Lien Bonds			
Sewage Disposal System Second Lien Revenue Bonds, Series 2001B	110,550,000	78,895,000	78,895,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2005A	273,355,000	31,885,000	31,885,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005B	40,215,000	17,115,000	17,115,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005C	63,160,000	100,000	100,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2006B	250,000,000	55,100,000	55,100,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2014C-7	76,715,000	76,715,000	76,715,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2015C	197,660,000	197,160,000	197,160,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2016C	295,190,000	295,190,000	295,190,000
	1,306,845,000	752,160,000	752,160,000

continued...

GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
Sewage Disposal System Revenue Bonds (concluded)			
Junior Lien Bonds (SRF)			
Sewage Disposal System Revenue Bonds, Series 2000 SRF-1	$ 44,197,995	$ 11,947,995	$ 11,947,995
Sewage Disposal System Revenue Bonds, Series 2000 SRF-2	64,401,066	19,141,066	19,141,066
Sewage Disposal System Revenue Bonds, Series 2001 SRF-1	82,200,000	33,535,000	33,535,000
Sewage Disposal System Revenue Bonds, Series 2001 SRF-2	59,850,000	24,420,000	24,420,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-1	18,985,000	5,660,000	5,660,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-2	1,545,369	460,369	460,369
Sewage Disposal System Revenue Bonds, Series 2002 SRF-3	31,549,466	11,864,466	11,864,466
Sewage Disposal System Revenue Bonds, Series 2003 SRF-1	48,520,000	22,350,000	22,350,000
Sewage Disposal System Revenue Bonds, Series 2003 SRF-2	25,055,370	10,150,370	10,150,370
Sewage Disposal System Revenue Bonds, Series 2004 SRF-1	2,910,000	1,160,000	1,160,000
Sewage Disposal System Revenue Bonds, Series 2004 SRF-2	18,353,459	7,298,459	7,298,459
Sewage Disposal System Revenue Bonds, Series 2004 SRF-3	12,722,575	5,042,575	5,042,575
Sewage Disposal System Revenue Bonds, Series 2007 SRF-1	167,540,598	106,940,598	106,940,598
Sewage Disposal System Revenue Bonds, Series 2009 SRF-1	13,970,062	8,910,062	8,910,062
Sewage Disposal System Revenue Bonds, Series 2010 SRF-1	4,214,763	2,925,763	2,925,763
Sewage Disposal System Revenue Bonds, Series 2012 SRF-1	14,950,000	13,150,000	13,150,000
Sewage Disposal System Revenue Bonds, Series 2015A SRF	79,500,000	73,200,000	73,200,000
Sewage Disposal System Revenue Bonds, Series 2015B SRF	27,175,304	24,565,304	24,565,304
Sewage Disposal System Revenue Bonds, Series 2015D SRF	19,485,000	13,781,478	17,945,000
Sewage Disposal System Revenue Bonds, Series 2016 SAW-1	10,000,000	10,000,000	10,000,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-1	19,305,000	9,051,147	19,305,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-2	51,310,000	19,153,758	51,310,000
Sewage Disposal System Revenue Bonds, Series 2017 SRF-1	38,450,000	11,089,130	38,450,000
	856,191,027	445,797,540	519,732,027
Total sewage disposal system revenue bonds	$ 5,596,651,319	$ 3,076,992,540	$ 3,150,927,027

concluded.

[1] Reflects original amount issued by predecessor entity, DWSD, for bonds issued prior to January 1, 2016.

[2] Includes the full purchase contract amounts not drawn by June 30, 2018 from state revolving funds. Final amounts will be determined after project close-out.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule of Debt Service Requirements

as of June 30, 2018

	Senior Lien Bonds (in $1,000s)			Second Lien Bonds (in $1,000s)		
Fiscal Year Ending [1]	Principal	Interest	Total Debt Service	Principal	Interest	Total Debt Service
Water fund						
2019 [2]	$ 2,270	$ 63,957	$ 66,227	$ 515	$ 31,045	$ 31,560
2020	37,705	80,683	118,388	15,420	33,168	48,588
2021	44,070	78,738	122,808	17,925	32,238	50,163
2022	48,980	76,412	125,392	20,345	31,179	51,524
2023	52,225	73,881	126,106	16,875	30,141	47,016
2024	58,610	71,105	129,715	18,185	29,154	47,339
2025	61,550	68,084	129,634	19,275	28,104	47,379
2026	64,650	64,902	129,552	20,350	26,995	47,345
2027	67,915	61,574	129,489	21,490	25,822	47,312
2028	71,310	58,092	129,402	22,700	24,583	47,283
2029	74,870	54,436	129,306	23,970	23,363	47,333
2030	78,625	50,597	129,222	25,135	22,193	47,328
2031	82,550	46,566	129,116	26,310	20,949	47,259
2032	86,690	42,332	129,022	27,625	19,601	47,226
2033	91,015	37,888	128,903	29,005	18,328	47,333
2034	84,900	33,443	118,343	40,840	16,926	57,766
2035	93,165	28,923	122,088	38,555	15,143	53,698
2036	104,610	23,918	128,528	1,210	14,149	15,359
2037	13,255	20,932	34,187	118,605	11,153	129,758
2038	52,690	19,206	71,896	5	8,187	8,192
2039	59,775	16,251	76,026	5	8,187	8,192
2040	62,895	13,052	75,947	5	8,187	8,192
2041	66,180	9,685	75,865	5	8,187	8,192
2042	68,340	6,177	74,517	5	8,186	8,191
2043	15,905	3,997	19,902	29,630	7,446	37,076
2044	16,705	3,182	19,887	31,110	5,927	37,037
2045	17,535	2,326	19,861	32,670	4,333	37,003
2046	18,415	1,427	19,842	34,300	2,658	36,958
2047	19,335	483	19,818	36,015	900	36,915
2048	-	-	-	-	-	-
2049	-	-	-	-	-	-
Total	$ 1,616,740	$ 1,112,249	$ 2,728,989	$ 668,085	$ 516,432	$ 1,184,517

Junior Lien Bonds (in $1,000s)			Total (in $1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2018	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
$ 1,775	$ 565	$ 2,340	$ 100,127	$ 244	$ 100,371
1,810	530	2,340	169,316	387	169,703
1,855	490	2,345	175,316	389	175,705
1,895	449	2,344	179,260	390	179,650
1,940	406	2,346	175,468	391	175,859
1,985	363	2,348	179,402	386	179,788
2,025	319	2,344	179,357	387	179,744
2,065	274	2,339	179,236	388	179,624
2,098	228	2,326	179,127	389	179,516
510	198	708	177,393	389	177,782
516	186	702	177,341	389	177,730
410	174	584	177,134	389	177,523
425	164	589	176,964	390	177,354
430	153	583	176,831	389	177,220
445	142	587	176,823	389	177,212
455	131	586	176,695	389	177,084
465	120	585	176,371	389	176,760
480	108	588	144,475	388	144,863
490	96	586	164,531	387	164,918
500	84	584	80,672	387	81,059
515	72	587	84,805	391	85,196
530	59	589	84,728	389	85,117
540	45	585	84,642	388	85,030
555	32	587	83,295	387	83,682
565	18	583	57,561	390	57,951
157	4	161	57,085	811	57,896
-	-	-	56,864	976	57,840
-	-	-	56,800	973	57,773
-	-	-	56,733	971	57,704
-	-	-	-	978	978
-	-	-	-	319	319
$ 25,436	$ 5,410	$ 30,846	$ 3,944,352	$ 14,599	$ 3,958,951

GREAT LAKES WATER AUTHORITY

Schedule of Debt Service Requirements

as of June 30, 2018

Fiscal Year Ending [1]	Senior Lien Bonds (in $1,000s) Principal	Interest	Total Debt Service	Second Lien Bonds (in $1,000s) Principal	Interest	Total Debt Service
Sewage disposal fund						
2019 [2]	$ 18,550	$ 69,373	$ 87,923	$ -	$ 31,001	$ 31,001
2020	60,620	85,743	146,363	6,075	37,696	43,771
2021	61,935	83,052	144,987	8,335	37,335	45,670
2022	50,395	80,625	131,020	17,515	36,663	54,178
2023	65,440	77,919	143,359	11,905	35,885	47,790
2024	74,955	74,397	149,352	3,215	35,485	38,700
2025	75,790	70,505	146,295	16,035	34,971	51,006
2026	74,635	66,540	141,175	16,995	34,087	51,082
2027	92,895	62,373	155,268	21,040	33,075	54,115
2028	97,065	58,266	155,331	25,795	31,840	57,635
2029	100,895	54,028	154,923	26,640	30,462	57,102
2030	105,475	49,485	154,960	19,860	29,230	49,090
2031	109,890	45,094	154,984	32,550	27,883	60,433
2032	113,795	40,939	154,734	34,175	26,215	60,390
2033	117,875	36,295	154,170	21,910	24,813	46,723
2034	123,245	30,594	153,839	25,915	23,641	49,556
2035	43,920	26,411	70,331	118,345	20,155	138,500
2036	1,450	25,273	26,723	168,680	13,075	181,755
2037	1,410	25,198	26,608	177,175	4,429	181,604
2038	107,095	22,370	129,465	-	-	-
2039	112,675	16,641	129,316	-	-	-
2040	118,550	10,614	129,164	-	-	-
2041	27,275	6,842	34,117	-	-	-
2042	28,635	5,444	34,079	-	-	-
2043	30,065	3,977	34,042	-	-	-
2044	31,570	2,436	34,006	-	-	-
2045	32,935	823	33,758	-	-	-
Total	$ 1,879,035	$ 1,131,257	$ 3,010,292	$ 752,160	$ 547,942	$ 1,300,102

[1] Reflects fiscal period in which actual payments are due.

[2] For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository accounts five business days prior to the due date of the bond principal and interest payments. Therefore, the payments for the principal and interest due on July 1, 2018, are not included in the debt service requirement amounts above as they were paid June 25, 2018.

Source: Great Lakes Water Authority Financial Services Area

Junior Lien Bonds (in $1,000s)			Total (in $1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2018	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
$ 37,390	$ 9,815	$ 47,205	$ 166,129	$ 1,874	$ 168,003
41,460	8,961	50,421	240,555	1,848	242,403
43,310	7,985	51,295	241,952	1,848	243,800
44,540	6,971	51,511	236,709	1,848	238,557
45,534	5,932	51,466	242,615	1,848	244,463
38,430	4,953	43,383	231,435	1,848	233,283
39,306	4,070	43,376	240,677	1,848	242,525
25,515	3,306	28,821	221,078	1,849	222,927
21,434	2,802	24,236	233,619	3,350	236,969
20,719	2,349	23,068	236,034	4,498	240,532
19,126	1,911	21,037	233,062	6,528	239,590
18,921	1,514	20,435	224,485	7,123	231,608
8,581	1,204	9,785	225,202	7,124	232,326
8,525	988	9,513	224,637	7,122	231,759
8,157	781	8,938	209,831	7,702	217,533
7,795	583	8,378	211,773	8,267	220,040
7,995	387	8,382	217,213	8,264	225,477
7,225	198	7,423	215,901	8,262	224,163
595	38	633	208,845	7,021	215,866
610	23	633	130,098	7,026	137,124
630	8	638	129,954	5,781	135,735
-	-	-	129,164	-	129,164
-	-	-	34,117	-	34,117
-	-	-	34,079	-	34,079
-	-	-	34,042	-	34,042
-	-	-	34,006	-	34,006
-	-	-	33,758	-	33,758
$ 445,798	$ 64,779	$ 510,577	$ 4,820,971	$ 102,879	$ 4,923,850

GREAT LAKES WATER AUTHORITY

Schedule 8

UNAUDITED

Current Debt Ratings

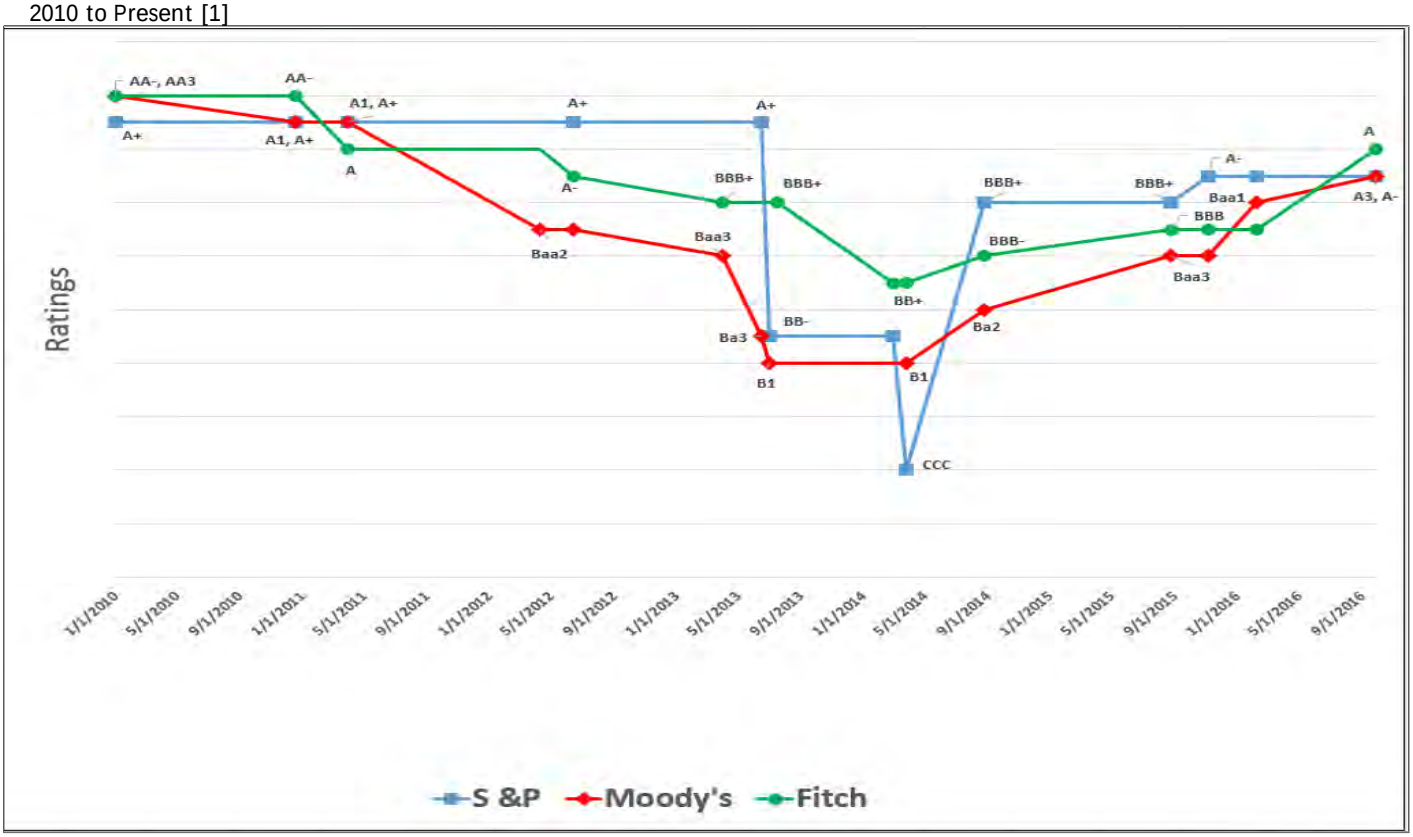
as of June 30, 2018

Debt Type	Rating Agency		
	Standard & Poor's	Moody's	Fitch
Water supply system revenue			
Senior lien	A-	A3	A
Second lien	BBB+	Baa1	A-
Junior lien	N/A	N/A	N/A
Sewage disposal system revenue			
Senior lien	A-	A3	A
Second lien	BBB+	Baa1	A-
Junior lien	N/A	N/A	N/A

Source: Great Lakes Water Authority Financial Services Area

Water and Sewer Senior Lien - Debt Ratings History

2010 to Present [1]



[1] September 30, 2016 ratings remain unchanged as of June 30, 2018.
See Subsequent Event Refunding footnote for additional information on upgraded debt ratings after June 30, 2018.
Source: Great Lakes Water Authority Financial Services Area

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GREAT LAKES WATER AUTHORITY

Schedule 10

UNAUDITED

Service Area Demographics

Last Ten Years

Year		Total Population (1)	Unemployment (2)	Per Capita Income (3)		Total Debt Service (5)	Debt Per Capita	Debt Service as a Percentage of Income
Water fund								
2018		3,800,000	3.7%	$ 51,493	(4)	$ 172,549,890	$ 45.41	0.09%
2017		3,800,000	4.4%	50,863		175,010,012	46.06	0.09%
2016	*	3,800,000	5.3%	48,692		171,138,525	45.04	0.09%
2015	*	3,800,000	5.9%	46,894		178,923,900	47.09	0.10%
2014	*	3,800,000	8.2%	44,718		182,464,900	48.02	0.11%
2013	*	3,800,000	9.7%	42,555		172,458,800	45.38	0.11%
2012	*	3,800,000	10.1%	42,168		153,524,200	40.40	0.10%
2011	*	3,800,000	11.4%	40,607		164,435,900	43.27	0.11%
2010	*	3,800,000	13.9%	37,837		157,590,500	41.47	0.11%
2009	*	3,976,100	15.1%	36,874		156,775,100	39.43	0.11%
Sewage disposal fund								
2018		2,800,000	3.7%	$ 51,493	(4)	$ 232,491,813	$ 83.03	0.16%
2017		2,800,000	4.4%	50,863		234,554,814	83.77	0.16%
2016	*	2,800,000	5.3%	48,692		228,570,571	81.63	0.17%
2015	*	2,807,000	5.9%	46,894		232,612,800	82.87	0.18%
2014	*	2,807,000	8.2%	44,718		229,611,100	81.80	0.18%
2013	*	2,807,000	9.7%	42,555		225,222,900	80.24	0.19%
2012	*	2,807,000	10.1%	42,168		203,092,300	72.35	0.17%
2011	*	2,807,000	11.4%	40,607		209,063,900	74.48	0.18%
2010	*	2,807,000	13.9%	37,837		200,985,100	71.60	0.19%
2009	*	2,998,200	15.1%	36,874		195,544,837	65.22	0.18%

(1) Source: Estimated based on data from Southeast Michigan Council of Governments (SEMCOG) and census.gov.

(2) Source: Bureau of Labor Statistics Detroit-Warren-Dearborn MSA Annual Average (For 2018 the September rate was used). The Detroit-Warren-Dearborn Metropolitan Statistical Area (MSA) is comprised of six counties: Wayne, Oakland, Macomb, Livingston, Lapeer and St. Clair. This represents the majority of the service area customers.

(3) Source: FRED Economic Data, St. Louis Fed

(4) Source: Michigan State University Center for Economic Analysis

(5) Debt service is based on set aside debt service requirements for the fiscal year which includes the subsequent year July 1st debt payment.

*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and six months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Ten Largest Wholesale Water Customers / Total Billed Revenue

Last Ten Years

	2009*	2010*	2011*	2012*
Operating revenues				
Flint [1]	$ 17,421,571	$ 17,421,663	$ 17,103,752	$ 20,919,987
Genesee County Drain Commission [1]	-	-	-	-
Southeast Oakland County Water Authority	9,285,621	9,285,621	10,293,814	12,111,306
Troy	7,445,795	7,550,028	7,295,491	-
Sterling Heights	8,578,659	8,696,601	8,113,053	9,882,899
Farmington Hills	7,547,579	7,547,585	7,775,635	8,503,722
Warren	-	-	7,532,208	9,121,108
Livonia	7,033,848	7,033,853	7,804,684	8,806,767
Shelby Township	7,403,055	7,403,056	8,175,322	9,966,936
Novi	6,913,500	6,782,362	7,063,698	8,340,815
Macomb Township	-	-	-	-
Rochester Hills	8,644,531	8,553,457	9,047,860	10,324,388
North Oakland County Water Authority	-	-	-	-
West Bloomfield Township	-	-	-	7,973,620
Canton Township	6,876,444	7,142,729	-	-
Ypsilanti Community Utilities Authority	-	-	-	-
Total	$ 87,150,603	$ 87,416,955	$ 90,205,517	$ 105,951,548
Operating revenues - DWSD	$ 274,095,463	$ 285,470,426	$ 316,002,201	$ 336,129,945
Operating revenues - GLWA	-	-	-	-
Total operating revenues	$ 274,095,463	$ 285,470,426	$ 316,002,201	$ 336,129,945
% of total operating revenues	31.80%	30.62%	28.55%	31.52%

[1] Flint contract terminated April 2013, but service provided through April 2014 and re-established in November 2015 on a temporary basis until a long-term contract took effect on December 1, 2017. Non-contract service has been provided to Genesee County Drain Commission (GCDC) from May 2014 through mid-December 2017. GCDC changed service providers in December 2017 and has contracted with GLWA for as needed emergency water service.

*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

Schedule 11

UNAUDITED

2013*	2014*	2015*	2016*	2017	2018
$ 23,308,800	$ 23,871,366	$ 15,804,309	$ -	$ 13,256,330	$ 12,235,483
-	-	-	17,231,935	18,493,530	-
19,541,038	19,467,746	19,779,978	22,846,983	22,434,129	23,118,160
9,311,146	9,715,613	9,761,438	12,365,922	13,939,815	13,842,135
12,089,582	12,015,093	12,650,819	14,678,915	15,480,008	15,571,146
10,575,173	9,769,372	9,797,153	-	-	-
9,945,794	9,060,112	9,297,285	-	-	-
10,338,724	9,728,576	10,325,750	12,809,124	13,483,657	13,669,376
10,824,461	10,770,614	11,035,002	12,689,582	13,462,808	13,554,398
-	-	-	11,869,865	-	-
-	-	-	10,103,536	10,945,117	11,167,739
9,529,341	9,600,373	9,432,554	-	-	-
-	-	-	22,585,698	22,913,261	23,365,866
9,655,154	-	-	-	-	-
-	9,400,322	9,692,530	12,319,875	13,872,584	13,334,615
-	-	-	-	-	11,038,134
$ 125,119,213	$ 123,399,187	$ 117,576,818	$ 149,501,435	$ 158,281,239	$ 150,897,052
$ 355,527,761	$ 349,369,362	$ 364,278,054	$ 167,665,532	$ -	$ -
-	-	-	217,759,272	351,749,944	338,312,144
$ 355,527,761	$ 349,369,362	$ 364,278,054	$ 385,424,804	$ 351,749,944	$ 338,312,144
35.19%	35.32%	32.28%	38.79%	45.00%	44.60%

Ten Largest Wholesale Sewer Customers / Total Billed Revenue

Last Ten Years

	2009*	2010*	2011*	2012*
Operating revenues				
Oakland Macomb Interceptor Drainage District	$ 57,753,543	$ 52,780,322	$ 51,216,403	$ 59,379,605
Wayne County - Rouge Valley	40,843,614	35,175,971	41,807,733	47,309,391
Oakland County-George W Kuhn Drainage District	33,965,834	27,820,025	35,810,320	39,620,971
Evergreen Farmington	26,875,478	22,080,501	24,951,389	28,097,941
NE Wayne County	18,023,991	14,760,986	19,146,923	20,532,777
Dearborn	13,572,269	12,752,026	14,441,467	15,884,591
Highland Park	4,438,562	3,965,206	4,490,709	4,840,249
Hamtramck	2,689,250	4,386,331	3,249,930	3,437,744
Grosse Pointe Farms	1,370,953	1,605,103	1,857,469	1,922,441
Grosse Pointe Park	1,206,275	976,896	1,151,516	1,413,363
Total	$ 200,739,770	$ 176,303,366	$ 198,123,859	$ 222,439,074
Operating revenues - DWSD	$ 390,126,398	$ 365,537,390	$ 410,719,075	$ 437,654,891
Operating revenues - GLWA	-	-	-	-
Total operating revenues	$ 390,126,398	$ 365,537,390	$ 410,719,075	$ 437,654,891
% of total operating revenues	51.46%	48.23%	48.24%	50.83%

*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area/The Foster Group

Schedule 11

UNAUDITED

2013*	2014*	2015*	2016*	2017	2018
$ 62,302,424	$ 71,972,397	$ 74,853,600	$ 69,206,904	$ 69,627,600	$ 72,816,000
44,972,847	51,181,360	50,930,400	51,784,039	55,486,800	55,022,400
38,148,325	41,658,188	42,046,800	42,804,155	45,682,800	45,751,200
27,556,982	29,198,838	29,686,800	30,177,613	32,179,200	33,733,200
19,293,968	20,406,419	22,585,200	22,993,819	24,120,000	24,637,200
15,292,901	16,406,661	18,190,800	18,368,762	19,603,200	19,628,400
5,007,724	6,887,428	5,569,200	5,616,167	5,818,800	5,642,400
3,586,927	3,941,094	4,054,800	3,936,205	4,086,000	3,958,800
2,462,068	2,502,113	2,449,200	2,486,773	2,667,600	2,696,400
1,273,953	1,244,951	1,465,200	1,492,206	1,626,000	1,740,000
$ 219,898,118	$ 245,399,451	$ 251,832,000	$ 248,866,643	$ 260,898,000	$ 265,626,000
$ 440,863,260	$ 475,770,844	$ 505,671,614	$ 282,415,566	$ -	$ -
-	-	-	230,464,969	505,807,082	473,582,559
$ 440,863,260	$ 475,770,844	$ 505,671,614	$ 512,880,535	$ 505,807,082	$ 473,582,559
49.88%	51.58%	49.80%	48.52%	51.58%	56.09%

GREAT LAKES WATER AUTHORITY

Schedule 12

UNAUDITED

Schedule of Wholesale Water Charges*

and Total Revenue Requirement for the Detroit Retail Class

Community Name	Fixed Monthly $/mo	Commodity $/Mcf	Community Name	Fixed Monthly $/mo	Commodity $/Mcf
Allen Park	$116,400	$ 6.87	Madison Heights	$ 101,300	$ 5.75
Almont, Village of	10,900	9.72	Mayfield Township	1,700	23.53
Ash Township	37,300	7.41	Melvindale	33,300	5.96
Belleville	15,500	8.64	New Haven, Village of	17,500	9.86
Berlin Township	35,900	9.90	North Oakland County Water Authority	1,165,900	10.02
Brownstown Township	170,900	9.87	Northville, City	37,500	9.35
Bruce Township	8,600	66.55	Northville Township	304,200	18.31
Canton Township	650,900	15.52	Novi	444,700	12.99
Center Line	23,700	5.82	Oak Park	66,600	5.32
Chesterfield Township	191,500	9.37	Oakland County Drain Commission	3,200	2.96
Clinton Township	392,600	7.77	Plymouth, City	50,800	9.69
Commerce Township	247,400	20.24	Plymouth Township	214,100	10.08
Dearborn	473,100	6.11	Redford Township	170,500	7.90
Dearborn Heights	190,500	7.19	River Rouge	34,800	5.25
Eastpointe	80,900	5.68	Riverview	45,800	8.20
Ecorse	71,400	3.82	Rockwood	14,900	11.21
Farmington	49,000	8.27	Romeo	12,500	16.62
Farmington Hills	446,900	9.76	Romulus	184,700	7.54
Ferndale	49,100	5.79	Roseville	132,700	5.33
Flat Rock	59,800	7.48	Royal Oak Township	11,200	7.54
Flint [1]	693,200	9.35	Shelby Township	678,900	13.60
Fraser	65,200	8.20	Southeastern Oakland County Water Authority	1,145,000	7.10
Garden City	82,300	7.34	South Rockwood	5,100	7.90
Genesee County Drain Commission [2]	603,300	9.23	Southgate	108,700	7.04
Gibraltar	23,400	10.83	St. Clair County-Burtchville Township	14,600	14.45
Grosse Ile Township	63,900	12.37	St. Clair County-Greenwood	19,900	13.95
Grosse Pointe Park	71,400	9.34	St. Clair Shores	155,400	6.00
Grosse Pointe Shores	31,000	12.57	Sterling Heights	797,300	10.35
Grosse Pointe Woods	73,100	8.13	Sumpter Township	32,100	8.82
Hamtramck	34,100	4.63	Sylvan Lake	11,800	14.02
Harper Woods	43,600	6.09	Taylor	242,200	6.88
Harrison Township	71,700	6.20	Trenton	106,300	9.43
Hazel Park	35,000	5.45	Troy	673,300	11.80
Highland Park [3]	62,600	4.56	Utica	29,600	9.75
Huron Township	70,700	9.24	Van Buren Township	145,100	9.03
Imlay City	49,600	10.54	Walled Lake	45,600	11.83
Imlay Township	700	68.63	Warren	506,900	5.93
Inkster	92,000	7.53	Washington Township	105,800	12.00
Keego Harbor	15,200	11.67	Wayne	138,700	11.71
Lapeer	69,200	9.85	West Bloomfield Township	482,500	14.65
Lenox Township	14,600	6.71	Westland	301,800	7.61
Lincoln Park	110,900	6.22	Wixom	121,500	14.08
Livonia	682,200	11.06	Woodhaven	102,400	13.17
Macomb Township	534,600	13.75	Ypsilanti Community Utilities Authority	542,900	8.78

Annual Detroit Wholesale Revenue Requirement $15,130,600 - Effective July 1, 2017

*Wholesale charges went into effect July 1, 2016

[1] Flint charges effective 12/1/17 Fixed monthly charge $545,000, Commodity charge $7.39, Pass-thru GCDC charge $67,917.40

[2] Genesee County Drain Commission service changed 12/16/17 to emergency service only, Commodity charge $17.00

[3] Highland Park charges effective 9/1/17 Fixed monthly charge $64,300, Commodity charge $4.68

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 13

UNAUDITED

Schedule of Wholesale Sewer Monthly Charges*

and Total Revenue Requirement for the Detroit Retail Class

	Total
Oakland Macomb Interceptor District (OMID)	$ 6,068,000
Rouge Valley	4,585,200
Oakland County - George W. Kuhn (GWK)	3,812,600
Evergreen Farmington	2,811,100
Northeast Wayne County	2,053,100
Dearborn	1,635,700
Highland Park	470,200
Hamtramck	329,900
Grosse Pointe Farms	224,700
Grosse Pointe Park	145,000
Melvindale	122,300
Farmington	94,900
Center Line	82,200
Grosse Pointe	75,800
Allen Park	64,300
Redford Township	21,200
Harper Woods	19,300
Wayne County #3	3,800

Annual Detroit Wholesale Revenue Requirement $178,969,200 - Effective July 1, 2017

*Wholesale charges went into effect July 1, 2017

Source: Great Lakes Water Authority Financial Services Area

Industrial Waste Control Charges and Pollutant Surcharges

Effective July 1, 2017

	Charge per Month
Industrial waste control charges	
Meter size - inches:	
5/8	$ 5.68
3/4	8.52
1	14.20
1 1/2	31.24
2	45.44
3	82.36
4	113.60
6	170.40
8	284.00
10	397.60
12	454.40
14	568.00
16	681.60
18	795.20
20	908.80
24	1,022.40
30	1,136.00
36	1,249.60
48	1,363.20

	Charge Per Pound
Pollutant surcharges	
Biochemical Oxygen Demand (BOD) for concentrations > 275 mg/l	$ 0.487
Total Suspended Solids (TSS) for concentrations > 350 mg/l	$ 0.494
Phosphorus (P) for concentrations > 12 mg/l	$ 7.282
Fats, Oil and Grease (FOG) for concentrations > 100 mg/l	$ 0.469
Septage Disposal Fee $ per 500 gallons of disposal	$ 47.00

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 15

UNAUDITED

Largest Employers

Current Year and 5 years Ago

Employer	Fixed Monthly Type of Business	Fiscal Year 2018 Full-time Employees	Fiscal Year 2018 Rank	Fiscal Year 2013 Full-time Employees	Fiscal Year 2013 Rank
Ford Motor Co.	Automobile manufacturer	48,000	1	43,977	1
General Motors Co.	Automobile manufacturer	37,400	2	26,843	4
FCA US LLC/Chrysler Group LLC	Automobile manufacturer	35,399	3	29,006	3
University of Michigan	Public university and health system	34,067	4	29,551	2
Beaumont Health	Health care system	28,012	5	13,134	9
Henry Ford Health System	Health care system	23,724	6	17,831	6
U.S. Government	Federal government	18,817	7	18,600	5
Rock Ventures	Umbrella entity managing a portfolio of companies in investment and real estate	17,819	8	n/a	n/a
Detroit Medical Center	Health care system	n/a	n/a	13,458	8
Trinity Health	Health care system	15,899	9	14,062	7
Ascension Michigan/St. John Providence Health System	Health care system	11,893	10	12,002	10

Source: Crain's Detroit Business, Largest Southeast Michigan Employers - Ranked by full-time employees as of July 2018 and July 2013.

Produced and Billed Water Volumes

Last Ten Years

Fiscal Year	Estimated Total Water Produced (Mcf) [1]	Reported Water Sales: Wholesale Customer Billed (Mcf)	Reported Water Sales: Local System Billed (Mcf)	Reported Water Sales: Total Water Billed (Mcf) [2]	Estimated Non-Revenue Water (Mcf)	Estimated Non-Revenue % of Production [3]
2009 *	$ 27,180,700	$ 16,682,100	$ 4,138,100	$ 20,820,200	$ 6,360,500	23.4%
2010 *	25,142,700	15,676,300	3,924,000	19,600,300	5,542,400	22.0%
2011 *	26,513,000	16,094,700	4,176,600	20,271,300	6,241,700	23.5%
2012 *	27,219,500	16,280,300	3,903,100	20,183,400	7,036,100	25.8%
2013 *	26,832,800	15,687,900	3,660,300	19,348,200	7,484,600	27.9%
2014 *	26,088,800	14,778,500	3,410,600	18,189,100	7,899,700	30.3%
2015 *	23,238,000	13,547,000	3,173,700	16,720,700	6,517,300	28.0%
2016 *	23,580,700	14,730,400	3,086,400	17,816,800	5,763,900	24.4%
2017	23,915,600	14,824,000	2,912,030	17,736,030	6,179,570	25.8%
2018	23,228,600	14,391,768	2,876,255	17,268,023	5,960,577	25.7%

[1] Represents, in part, estimated volumes based on pump curves and engineering analysis. GLWA engineering studies in 2017 concluded that total water production values for calendar year 2016 were over-reported by 5.8%.

[2] Represents metered wholesale amounts for all customers other than Detroit, Dearborn, and Highland Park. Water sales to those customers reflect, in part, estimated retail water sales during this period. GLWA is modifying this approach, which will result in larger reported water sales figures in future years.

[3] As noted in [1] and [2], these values are likely overestimated. GLWA expects recently modified flow measuring methods to result in lower values in future years.

*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 is based on operations under DWSD. Data from 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 17

UNAUDITED

Treated and Billed Wastewater Volumes

Last Ten Years

Fiscal Year		Total Wastewater Treated (mg)	Customer Wastewater Volume (mg) Wholesale Customers [1]	Local System [2]	Total
2009	*	$ 260,800	$ 123,200	$ 29,600	$ 152,800
2010	*	221,400	100,600	27,100	127,700
2011	*	253,500	112,700	28,000	140,700
2012	*	255,500	112,600	24,900	137,500
2013	*	220,600	99,400	23,100	122,500
2014	*	233,200	107,200	22,100	129,300
2015	*	222,700	103,700	20,100	123,800
2016	*	209,200	96,800	20,600	117,400
2017		254,400	105,500	19,200	124,700
2018		235,600	119,400	19,500	138,900

*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 is based on operations under DWSD. Data from 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

[1] Primarily metered wastewater volumes, but also includes water sales volumes for some customers whose wastewater is not metered. A fixed charge billing methodology was implemented in 2015. Volumes reflect measured and monitored wastewater flow.

[2] Reported water sales to retail customers

Source: Great Lakes Water Authority Financial Services Area and DWSD

GREAT LAKES WATER AUTHORITY

Schedule 18
UNAUDITED

Pledges of Revenue and Debt Service Coverage - Water Fund

as of June 30, 2018

The Authority has pledged specific revenue streams to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The bonds and loans are paid solely from the net revenues of the Water System including the retail revenues from the Retail Customers who are serviced under the Water and Sewer Services Agreement with the City of Detroit. The pledged revenues for the fiscal year ending June 30, 2018 were reported by two entities because of the lease agreement between the City of Detroit and Great Lakes Water Authority which became effective on January 1, 2016. The pledged revenue definition in the Great Lakes Water Authority Master Bond Ordinance includes the retail revenues of the City of Detroit Water and Sewerage Department as this revenue is pledged for payment of the bonded debt owed by the Great Lakes Water Authority. A summary of the pledged revenue and the applicable debt as of June 30, 2018 is as follows:

	Water Fund			
	Budget [3]	Actual [4]	Variance	% Variance
Term of pledged commitment		Through 2047		
Calculation of Pledged Revenue as defined in Master Bond Ordinance				
GLWA revenue pledged-excludes local charges				
Suburban Wholesale Customers [1]	$ 310,019,800	$ 323,117,344	$ 13,097,544	4%
Detroit Customers				
Wholesale Service Charge Revenue [1]	15,130,600	15,130,600	-	0%
Local Service Revenues	73,860,600	80,542,437	6,681,837	9%
Total Detroit Customers	88,991,200	95,673,037	6,681,837	8%
Total Service Charge Revenue	399,011,000	418,790,381	19,779,381	5%
Other Operating Revenue-GLWA	-	64,200	64,200	100%
Other Operating Revenue-DWSD	4,750,000	3,441,349	(1,308,651)	-28%
Earnings on investments net of construction fund investment earnings	2,968,900	4,489,397	1,520,497	51%
Total Revenue	406,729,900	426,785,327	20,055,427	5%
Cash Transfers				
Operations and Maintenance Fund Regional System	127,610,600	127,621,400	10,800	0%
Operations and Maintenance Fund Local System	39,331,700	39,341,300	9,600	0%
Total Cash Transfers to Operations and Maintenance Funds	166,942,300	166,962,700	20,400	0%
Pledged revenue for the year ending June 30, 2018	$ 239,787,600	$ 259,822,627	$ 20,035,027	8%
Principal and interest funding requirement for the year ending June 30, 2018 [2]:				
Senior Lien Bonds	$ 127,687,500	$ 127,687,420	$ (80)	0%
Second Lien Bonds	42,852,900	42,852,813	(87)	0%
Total Senior and Second Lien Bonds	170,540,400	170,540,233	(167)	0%
Junior Lien Bonds	2,410,700	2,009,658	(401,042)	-17%
Total All Bonds	$ 172,951,100	$ 172,549,891	$ (401,209)	0%
Rate Covenant Debt Service Coverage [2]				
Senior Lien Bonds	1.88	2.03	0.15	8%
Senior and Second Lien Bonds	1.41	1.52	0.11	8%
All Bonds, Including SRF Junior Lien	1.39	1.51	0.12	9%
Approximate amount in restricted cash investments related to various bond indentures at June 30, 2018		$ 142,631,408		

[1] Total GLWA Regional System Wholesale Revenue

[2] Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test calculations.

[3] The purpose of this information is to show a combined reference of the regional system revenue requirements as approved by the GLWA and the local revenue requirements adopted and amended by DWSD included here for review of budget-to-actual performance in alignment with the Master Bond Ordinance. The DWSD budget reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[4] At the of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

Source: Great Lakes Water Authority Financial Services Area

Pledges of Revenue and Debt Service Coverage - Sewage Disposal Fund

as of June 30, 2018

The Authority has pledged specific revenue streams to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The bonds and loans are paid solely from the net revenues of the Sewer System including the retail revenues from the Retail Customers who are serviced under the Water and Sewer Services Agreement with the City of Detroit. The pledged revenues for the fiscal year ending June 30, 2018 were reported by two entities because of the lease agreement between the City of Detroit and Great Lakes Water Authority which became effective on January 1, 2016. The pledged revenue definition in the Great Lakes Water Authority Master Bond Ordinance includes the retail revenues of the City of Detroit Water and Sewerage Department as this revenue is pledged for payment of the bonded debt owed by the Great Lakes Water Authority. A summary of the pledged revenue and the applicable debt as of June 30, 2018 is as follows:

	Sewage Disposal Fund			
	Budget [3]	Actual [4]	Variance	% Variance
Term of pledged commitment		Through 2045		
Calculation of Pledged Revenue as defined in Master Bond Ordinance				
GLWA revenue pledged-excludes local charges				
Suburban Wholesale Customers [1]	$ 267,033,800	$ 268,978,831	$ 1,945,031	1%
Industrial waste charges	14,457,700	14,334,979	(122,721)	-1%
Pollutant surcharges	5,099,000	6,908,404	1,809,404	35%
Subtotal - Regional System Suburban Wholesale Customers	286,590,500	290,222,214	3,631,714	1%
Detroit Customers				
Wholesale Service Charge Revenue [1]	178,969,200	178,969,200	-	0%
Local Service Revenues	77,922,900	81,612,282	3,689,382	5%
Total Detroit Customers	256,892,100	260,581,482	3,689,382	1%
Total Service Charge Revenue	543,482,600	550,803,696	7,321,096	1%
Other Operating Revenue-GLWA	-	4,391,145	4,391,145	100%
Other Operating Revenue-DWSD	5,000,000	5,089,230	89,230	2%
Earnings on investments net of construction fund investment earnings	2,751,000	4,022,582	1,271,582	46%
Total Revenue	551,233,600	564,306,653	13,073,053	2%
Cash Transfers				
Operations and Maintenance Fund Regional System	201,903,400	201,889,000	(14,400)	0%
Operations and Maintenance Fund Local System	63,258,000	63,362,192	104,192	0%
Total Cash Transfers to Operations and Maintenance Funds	265,161,400	265,251,192	89,792	0%
Pledged revenue for the year ending June 30, 2018	$ 286,072,200	$ 299,055,461	$ 12,983,261	5%
Principal and interest funding requirement for the year ending June 30, 2018 [2]:				
Senior Lien Bonds	$ 142,376,800	$ 141,718,836	(657,964)	0%
Second Lien Bonds	43,990,100	43,990,100	-	0%
Total Senior and Second Lien Bonds	186,366,900	185,708,936	(657,964)	0%
Junior Lien Bonds	48,641,100	46,782,877	(1,858,223)	-4%
Total All Bonds	$ 235,008,000	$ 232,491,813	$ (2,516,187)	-1%
Rate Covenant Debt Service Coverage [2]				
Senior Lien Bonds	2.01	2.11	0.10	5%
Senior and Second Lien Bonds	1.53	1.61	0.08	5%
All Bonds, Including SRF Junior Lien	1.22	1.29	0.07	6%
Approximate amount in restricted cash investments related to various bond indentures at June 30, 2018		$ 99,654,215		

[1] Total GLWA Regional System Wholesale Revenue

[2] Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test calculations.

[3] The purpose of this information is to show a combined reference of the regional system revenue requirements as approved by the GLWA and the local revenue requirements adopted and amended by DWSD included here for review of budget-to-actual performance in alignment with the Master Bond Ordinance. The DWSD budget reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[4] At the of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 18
UNAUDITED

Pledges of Revenue and Debt Service Coverage

Last Three Years [1]

	2018 [3]	2017 [4]	2016 [1]
Water fund			
Pledged revenue	$ 259,822,627	$ 272,268,873	$ 270,117,396
Principal and interest funding requirement [2]:			
Senior and second lien bonds			
Senior lien bonds	$ 127,687,420	$ 134,234,660	$ 128,177,999
Second lien bonds	42,852,813	38,990,023	41,178,843
Total senior and second lien bonds	170,540,233	173,224,683	169,356,842
Junior lien bonds	2,009,658	1,785,328	1,781,683
Total all bonds	$ 172,549,891	$ 175,010,011	$ 171,138,525
Rate covenant debt service coverage [2]			
Senior lien bonds	2.03	2.03	2.11
Senior and second lien bonds	1.52	1.57	1.59
All bonds, including SRF junior lien	1.51	1.56	1.58
Sewage disposal fund			
Pledged revenue	$ 299,055,461	$ 326,300,994	$ 326,048,837
Principal and interest funding requirement [2]:			
Senior and second lien bonds			
Senior lien bonds	$ 141,718,836	$ 140,854,010	$ 140,191,016
Second lien bonds	43,990,100	47,918,639	48,944,924
Total senior and second lien bonds	185,708,936	188,772,649	189,135,940
Junior lien bonds	46,782,877	45,782,165	39,434,631
Total all bonds	$ 232,491,813	$ 234,554,814	$ 228,570,571
Rate covenant debt service coverage [2]			
Senior lien bonds	2.11	2.32	2.33
Senior and second lien bonds	1.61	1.73	1.72
All bonds, including SRF junior lien	1.29	1.39	1.43

[1] GLWA started operations on January 1, 2016. Includes 6 months under operations of DWSD and 6 months under the operations of GLWA under the Master Bond Ordinances in effect during the respective time periods.

[2] Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test calculations.

[3] At the of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[4] Pledged revenue was updated for change in what items to include in DWSD revenue. The miscellaneous operating income was removed and the revenue was reduce for bad debt expense reported under operating expenses by DWSD.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule 19
UNAUDITED

Additional Summary Statistics

Last Three Years*

	2018	2017	2016
Capital Asset Statistics - Water			
Water Treatment Plants	5	5	5
Intake Facilities	3	3	3
Booster Pumping Stations	19	19	19
Water Storage Reservoirs	32	32	32
Miles of Transmission Lines	803	803	803
Capital Asset Statistics - Sewer			
Water Resource Recovery Facility	1	1	1
Major Interceptors	3	3	3
Combined Sewer Overflow Facilities:			
Retention Treatment Basins	5	5	5
Flow-through Type Facilities	3	3	3
Miles of Trunk Sewers and Interceptors	181	181	181
GLWA Employees	968	881	782

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

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GLWA

Great Lakes Water Authority

Financial Services
735 Randolph, Suite 1608
Detroit, Michigan 48226

Great Lakes Water Authority

Year Ended
June 30, 2018

Single Audit Act Compliance

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GREAT LAKES WATER AUTHORITY

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INDEPENDENT AUDITORS' REPORT ON THE SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS REQUIRED BY THE UNIFORM GUIDANCE

December 14, 2018

To the Board of Directors of the
Great Lakes Water Authority
Detroit, Michigan

We have audited the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements. We issued our report thereon dated December 14, 2018, which contained unmodified opinions on those financial statements. Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the basic financial statements. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Rehmann Robson LLC

GREAT LAKES WATER AUTHORITY

Schedule of Expenditures of Federal Awards

For the Year Ended June 30, 2018

Federal Agency / Cluster / Program Title	CFDA Number	Pass-through / Grantor Number	Total Subawards	Federal Expenditures
U.S. Environmental Protection Agency				
Passed-through the Michigan Department of Environmental Quality:				
Capitalization Grants for Clean Water State Revolving Funds Cluster:				
State Revolving Funds	66.458	5619-02	$ -	$ 8,113
State Revolving Funds	66.458	5635-01	-	1,009,990
State Revolving Funds	66.458	5351-01	-	1,452,722
State Revolving Funds	66.458	5651-01	-	2,598,091
			-	5,068,916
Capitalization Grants for Drinking Water State Revolving Funds Cluster:				
State Revolving Funds	66.468	7412-01	2,912,172	4,686,633
State Revolving Funds	66.468	7413-01	1,388,010	1,388,010
State Revolving Funds	66.468	7414-01	1,142,155	1,142,155
			5,442,337	7,216,798
Total Expenditures of Federal Awards			$ 5,442,337	$ 12,285,714

See notes to schedule of expenditures of federal awards.

GREAT LAKES WATER AUTHORITY

Notes to Schedule of Expenditures of Federal Awards

1. BASIS OF PRESENTATION

The accompanying schedule of expenditures of federal awards (the "Schedule") includes the federal grant activity of the Great Lakes Water Authority (the "Authority") under programs of the federal government for the year ended June 30, 2018. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of the Authority, it is not intended to and does not present the financial position, changes in net position or cash flows of the Authority.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Expenditures reported on the Schedule are reported on the modified cash basis of accounting, which is described as follows:

- *Basis of accounting.* In general, expenditures are reported in the Schedule when the Authority remits payment to a vendor or contractor, rather than when an expense is incurred by the Authority in accordance with Generally Accepted Accounting Principles (GAAP). Additionally, any amounts paid to subrecipients are included when paid or transferred instead of when incurred. The Authority reports its expenditures using this method based on guidance it received from the Michigan Department of Environmental Quality (MDEQ), which serves as the pass-through entity for all of the Authority's federally funded loan programs.

- *Pre-award costs.* In addition to the above, the MDEQ may approve reimbursement of costs related to projects undertaken (and paid to vendors) in prior periods. In those cases, as the payments were not previously reported as federal expenditures, they are reported on the Schedule in the period reimbursement is approved by the MDEQ which is normally with the initial project cash draw.

The above referenced expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule, if any, represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. Pass-through entity identifying numbers are presented where available.

For purposes of charging indirect costs to federal awards, the Authority has elected not to use the 10 percent de minimis cost rate as permitted by §200.414 of the Uniform Guidance.

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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

December 14, 2018

To the Board of Directors of the
Great Lakes Water Authority
Detroit, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority"), as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated December 14, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and, therefore, material weaknesses or significant deficiencies may exist that have not been identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify a certain deficiency in internal control over financial reporting, described in the accompanying schedule of findings and questioned costs as item 2018-001, that we consider to be a significant deficiency.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

Great Lakes Water Authority's Response to Finding

The Authority's response to the finding identified in our audit is described in the accompanying schedule of findings and questioned costs. The Authority's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



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INDEPENDENT AUDITORS' REPORT ON COMPLIANCE FOR THE MAJOR FEDERAL PROGRAM AND ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE

December 14, 2018

To the Board of Directors of the
Great Lakes Water Authority
Detroit, Michigan

Report on Compliance for the Major Federal Program

We have audited the compliance of the *Great Lakes Water Authority* (the "Authority") with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on the Authority's major federal program for the year ended June 30, 2018. The Authority's major federal program is identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal program.

Independent Auditors' Responsibility

Our responsibility is to express an opinion on compliance for the Authority's major federal program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major federal program. However, our audit does not provide a legal determination of the Authority's compliance.

Opinion on the Major Federal Program

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2018.

Report on Internal Control Over Compliance

Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the types of requirements that could have a direct and material effect on the major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Purpose of this Report

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.



GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2018

SECTION I - SUMMARY OF AUDITORS' RESULTS

Financial Statements

Type of report the auditor issued on whether the financial statements audited were prepared in accordance with GAAP:	Unmodified	
Internal control over financial reporting:		
Material weakness(es) identified?	____ yes	X no
Significant deficiency(ies) identified?	X yes	____ none reported
Noncompliance material to financial statements noted?	____ yes	X no

Federal Awards

Internal control over major programs:		
Material weakness(es) identified?	____ yes	X no
Significant deficiency(ies) identified?	____ yes	X none reported
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	____ yes	X no

Identification of major programs and type of auditors' report issued on compliance for each major program:

CFDA Number	Name of Federal Program or Cluster	Type of Report
66.458	Capitalization Grants for Clean Water State Revolving Funds Cluster	Unmodified

Dollar threshold used to distinguish between Type A and Type B programs:	$ 750,000	
Auditee qualified as low-risk auditee?	____ yes	X no

GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs

For the Year Ended June 30, 2018

SECTION II – FINANCIAL STATEMENT FINDINGS

2018-001 - Timely Report Issuance in the Prior Year

Finding Type. Significant Deficiency in internal control over Financial Reporting.

Criteria. Management is responsible for maintaining its accounting records in accordance with generally accepted accounting principles (GAAP) and submitting required reporting packages by established deadlines.

Condition. The Authority did not submit its fiscal year 2017 audited Comprehensive Annual Financial Report (CAFR), Single Audit Act Compliance (SAAC) report or Data Collection Form (DCF) by the state and federal deadlines.

Cause. The complex nature of the bifurcation of the balance sheet and separation from the City of Detroit in prior years resulted in the need for a memorandum of understanding between the Authority and the Detroit Water and Sewerage Department. This memorandum was a necessary component of the fiscal year 2017 audit and was not made final until April 2018.

Effect. As a result of this condition, the Authority was unable to comply with state and federal reporting requirements.

Recommendation. The Authority should ensure compliance with reporting requirements.

View of Responsible Officials. We have reviewed the findings and concur with the recommendations. This timing was unique to the ongoing discussions and Memorandum of Understanding.

GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs

For the Year Ended June 30, 2018

SECTION III – FEDERAL AWARDS FINDINGS AND QUESTIONED COSTS

None reported.

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GREAT LAKES WATER AUTHORITY

Summary Schedule of Prior Audit Findings

For the Year Ended June 30, 2018

2017-001 – Timely Year-end Closing and Completion

Due to the complex nature of the bifurcation of the balance sheet, and separation from the City of Detroit, there were delays in completion of the bank reconciliations and adjusting various accounts to the final balances for the 2016 and 2017 audits.

This finding was adequately resolved with the timely filing of the June 30, 2018 audit within six months of year end.

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INDEPENDENT AUDITORS' COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE

December 14, 2018

To the Board of Directors
Great Lakes Water Authority
Detroit, Michigan

We have audited the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2018, and have issued our report thereon dated December 14, 2018. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit

As communicated in our engagement letter dated June 14, 2018, our responsibility, as described by professional standards, is to form and express opinions about whether the financial statements that have been prepared by management with your oversight are fairly presented, in all material respects, in conformity with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of your respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the Authority solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

We have provided our findings regarding internal control over financial reporting and compliance noted during our audit in a separate letter to you dated December 14, 2018. In addition, we noted certain other matters which are included in Attachment A to this letter.

Planned Scope and Timing of the Audit

We performed the audit according to the planned scope and timing previously communicated to you in our engagement letter and in our meeting about planning matters on June 14, 2018.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, and our firm has complied with all relevant ethical requirements regarding independence.

Qualitative Aspects of the Authority's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the Authority is included in Note 1 to the financial statements.

The Authority changed accounting policies related to capitalized interest during the construction period for business-type activities by adopting Statement of Governmental Accounting Standards (GASB Statement) No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period*. This accounting change had no cumulative effect on the beginning of the year balances.

No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Management's estimate of the acquisition value of the assets and liabilities acquired by lease agreement from the City of Detroit at the inception of the Authority's fiscal operations, which has a lasting impact.
- Management's estimate of the allocation of the debt service responsibilities between the Authority and the City of Detroit.
- Management's estimate of the shared services between the Authority and the City of Detroit are not yet finalized and subject to negotiation.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- Management's estimate of the allowance for uncollectible receivable balances is based on past experience and future expectation for collection of various account balances.
- Management's estimate of the insurance claims incurred but not reported is based on information provided by the entity's third-party administrators and subsequent claims activity.

We evaluated the key factors and assumptions used to develop these estimates and determined that they are reasonable in relation to the basic financial statements taken as a whole and in relation to the applicable opinion units. In addition, the financial statements include a net pension liability and other pension-related amounts, which are dependent on estimates made by the City of Detroit General Employees' Retirement System. These estimates are based on historical trends and industry standards, but are not within the control of management.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements relate to the acquisition value of assets acquired and liabilities assumed when the Authority was created. Independent experts provided estimates regarding the acquisition value of capital assets, useful lives of those assets and the related debt. See Note 14 for discussion of the lease from the City of Detroit that is the basis for the acquisition transaction.

Significant Difficulties Encountered During the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole and each applicable opinion unit. In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. None of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to the financial statements taken as a whole.

The schedule of adjustments passed is included with management's written representations in Attachment C to this letter, and summarizes uncorrected financial statement misstatements whose effects in the current and prior periods, as determined by management, are immaterial, both individually and in the aggregate, to the financial statements taken as a whole and each applicable opinion unit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the Authority's financial statements or the auditors' report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management, which are included in Attachment C to this letter.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings, or Issues

In the normal course of our professional association with the Authority, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, operating and regulatory conditions affecting the entity, and operational plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the Authority's auditors.

Upcoming Changes in Accounting Standards

Generally accepted accounting principles (GAAP) are continually changing in order to promote the usability and enhance the applicability of information included in external financial reporting. While it would not be practical to include an in-depth discussion of every upcoming change in professional standards, Attachment B to this letter contains a brief overview of recent pronouncements of the Governmental Accounting Standards Board (GASB) and their related effective dates. Management is responsible for reviewing these standards, determining their applicability, and implementing them in future accounting periods.

This information is intended solely for the use of the governing body and management of the *Great Lakes Water Authority* and is not intended to be and should not be used by anyone other than these specified parties.

Very truly yours,

Rehmann Lohan LLC

GREAT LAKES WATER AUTHORITY

Attachment A - Comments and Recommendations

For the June 30, 2018 Audit

During our audit, we became aware of certain other matters that are opportunities for strengthening internal control and/or improving operating efficiency. This memorandum summarizes our comments and recommendations regarding those matters. Our consideration of the Authority's internal control over financial reporting is described in our report, dated December 14, 2018, issued in accordance with *Government Auditing Standards.* This memorandum does not affect that report or our report dated December 14, 2018, on the financial statements of the Great Lakes Water Authority.

Salary Documentation

Salary documentation was not available for one out of twenty-five employees selected for testing. Pay rates should be properly documented.

Conflict of Interest Policy

The current conflict of interest policy requires that Board members sign a form only when sworn in and that top management and contractors do not sign any form related to conflict of interest matters. We suggest that the Authority review and update its policies and procedures to require that Board members, top management and contractors sign a conflict of interest form, annually.

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GREAT LAKES WATER AUTHORITY

Attachment B – Upcoming Changes in Accounting Standards / Regulations

For the June 30, 2018 Audit

The following pronouncements of the Governmental Accounting Standards Board (GASB) have been released recently and may be applicable to the Authority in the near future. We encourage management to review the following information and determine which standard(s) may be applicable to the Authority. For the complete text of these and other GASB standards, visit www.gasb.org and click on the "Standards & Guidance" tab. If you have questions regarding the applicability, timing, or implementation approach for any of these standards, please contact your audit team.

GASB 83 ■ Certain Asset Retirement Obligations
Effective 06/15/2019 (your FY 2019)

This standard addresses accounting and financial reporting for certain asset retirement obligations--legally enforceable liabilities associated with the retirement of a tangible capital asset. We do not expect this standard to have any significant effect on the Authority.

GASB 84 ■ Fiduciary Activities
Effective 12/15/2019 (your FY 2020)

This standard establishes new criteria for determining how to report fiduciary activities in governmental financial statements. The focus is on whether the government is controlling the assets, and who the beneficiaries are. Under this revised standard, certain activities previously reported in agency funds may be reclassified in future periods. We do not expect this standard to have any significant effect on the Authority.

GASB 87 ■ Leases
Effective 12/15/2020 (your FY 2021)

This standard establishes a single model for reporting all leases (including those previously classified as operating and capital). Lessees will now report offsetting intangible lease assets and lease liabilities equal to the present value of future lease payments. Lessors will report offsetting lease receivables and deferred inflows of resources.

GASB 88 ■ Certain Disclosures Related to Debt
Effective 06/15/2019 (your FY 2019)

This standard provides guidance on note disclosures related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. We do not expect this standard to have any significant effect on the Authority.

GREAT LAKES WATER AUTHORITY

Attachment B – Upcoming Changes in Accounting Standards / Regulations

For the June 30, 2018 Audit

GASB 90 ■ Majority Equity Interests

Effective 12/15/2019 (your FY 2020)

This standard addresses situations in which a government acquires a majority of the equity interest in a legally separate organization, and whether such holdings should be reported as an investment or a component unit. We do not expect this standard to have any significant effect on the Authority.

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GREAT LAKES WATER AUTHORITY

Attachment C – Management Representations

For the June 30, 2018 Audit

The following pages contain the written representations that we requested from management.

GLWA

December 14, 2018

Rehmann Robson
675 Robinson Road
Jackson, MI 49203

This representation letter is provided in connection with your audit of the financial statements of the business-type activities and each major fund of the ***Great Lakes Water Authority*** (the "Authority"), as of and for the year ended June 30, 2018, and the related notes to the financial statements, for the purpose of expressing opinions on whether the basic financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows of the Authority in conformity with accounting principles generally accepted for governments in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm that, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves as of December 14, 2018:

Financial Statements

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated June 14, 2018, for the preparation and fair presentation of the financial statements of the various opinion units referred to above in accordance with U.S. GAAP. We have reviewed, approved, and taken responsibility for the financial statements and related notes.
2. We have reviewed and approved the various adjusting journal entries that were proposed by you for recording in our books and records and reflected in the financial statements.
3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
4. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.
5. Significant assumptions used by us in making accounting estimates, including those measured at fair value, are reasonable.
6. Related party relationships and transactions have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP. For the purposes of this letter, related parties mean members of the governing body; board members; administrative officials; immediate families of administrative officials, board members, and members of the governing body; and any companies affiliated with or owned by such individuals.
7. All events subsequent to the date of the financial statements and for which U.S. GAAP requires adjustment or disclosure have been adjusted or disclosed.

8. The effects of uncorrected misstatements summarized in the attached schedule and aggregated by you during the current engagement are immaterial, both individually and in the aggregate, to the applicable opinion units and to the financial statements as a whole.
9. The effects of all known actual or possible litigation and claims have been accounted for and disclosed in accordance with U.S. GAAP.
10. With regard to items reported at fair value:
    a. The underlying assumptions are reasonable and they appropriately reflect management's intent and ability to carry out its stated courses of action.
    b. The measurement methods and related assumptions used in determining fair value are appropriate in the circumstances and have been consistently applied.
    c. The disclosures related to fair values are complete, adequate, and in conformity with U.S. GAAP.
    d. There are no subsequent events that require adjustments to the fair value measurements and disclosures included in the financial statements.
11. All component units, as well as joint ventures with an equity interest, are included and other joint ventures and related organizations are properly disclosed.
12. All funds and activities are properly classified.
13. All funds that meet the quantitative criteria in GASB Statement No. 34, *Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments*, and GASB Statement No. 37, *Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments: Omnibus*, for presentation as major are identified and presented as such and all other funds that are presented as major are considered important to financial statement users.
14. All components of net position and fund balance classifications have been properly reported.
15. All revenues within the statement of activities have been properly classified as program revenues, general revenues, contributions to term or permanent endowments, or contributions to permanent fund principal.
16. All expenses have been properly classified in or allocated to functions and programs in the statement of activities, and allocations, if any, have been made on a reasonable basis.
17. All interfund and intra-entity transactions and balances have been properly classified and reported.
18. Special items and extraordinary items have been properly classified and reported.
19. Deposit and investment risks have been properly and fully disclosed.
20. Capital assets, including infrastructure assets, are properly capitalized, reported, and if applicable, depreciated.
21. All required supplementary information is measured and presented within the prescribed guidelines.
22. We are responsible for the fair presentation of the Authority's net pension liability based upon calculations by the City of Detroit General Employees' Retirement System ("GRS") and related amounts. We appropriately allocated the net pension liability based on the assumptions in the lease agreements, pension agreement and the allocation letter signed by the GLWA Chief Executive Officer and the Detroit Water & Sewerage Department ("DWSD") Director on January 24, 2017. We have properly disclosed our special funding situation under GASB 68, *Accounting and Financial Reporting for Pension Plans*. We have reviewed the information provided by GRS for inclusion in the Authority's financial statements.

Information Provided

23. We have provided you with:
    a. Access to all information, of which we are aware that is relevant to the preparation and fair presentation of the financial statements of the various opinion units referred to above, such as records, documentation, meeting minutes, and other matters;
    b. Additional information that you have requested from us for the purpose of the audit; and
    c. Unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.

24. All transactions have been recorded in the accounting records and are reflected in the financial statements.
25. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.
26. We have no knowledge of any fraud or suspected fraud that affects the entity and involves:
    d. Management;
    e. Employees who have significant roles in internal control; or
    f. Others where the fraud could have a material effect on the financial statements.
27. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the entity's financial statements communicated by employees, former employees, vendors, regulators, or others.
28. We have disclosed to you all known actual or possible litigation and claims whose effects should be considered when preparing the financial statements.
29. We have disclosed to you the identity of the entity's related parties and all the related party relationships and transactions of which we are aware.
30. There have been no communications from regulatory agencies concerning noncompliance with or deficiencies in accounting, internal control, or financial reporting practices.
31. The government has no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.
32. We have disclosed to you all guarantees, whether written or oral, under which the government is contingently liable.
33. We have identified and disclosed to you the laws, regulations, and provisions of contracts and grant agreements that could have a direct and material effect on financial statement amounts, including legal and contractual provisions for reporting specific activities in separate funds.
34. There are no:
    g. Violations or possible violations of laws or regulations, or provisions of contracts or grant agreements whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency, including applicable budget laws and regulations.
    h. Unasserted claims or assessments that our lawyer has advised are probable of assertion and must be disclosed in accordance with GASB-62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*.
    i. Other liabilities or gain or loss contingencies that are required to be accrued or disclosed by GASB-62.
35. The government has satisfactory title to all owned assets, and there are no liens or encumbrances on such assets nor has any asset or future revenue been pledged as collateral, except as disclosed to you.
36. We have complied with all aspects of grant agreements and other contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
37. We have disclosed to you all significant estimates and material concentrations known to management that are required to be disclosed in accordance with GASB-62. Significant estimates are estimates at the balance sheet date that could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets or geographic areas for which events could occur that would significantly disrupt normal finances within the next year.

Supplementary Information in Relation to the Financial Statements as a Whole

38. With respect to the supplementary information accompanying the financial statements:
    a. We acknowledge our responsibility for the presentation of the supplementary information in accordance with accounting principles generally accepted in the United States of America.
    b. We believe the supplementary information, including its form and content, is fairly presented in accordance with accounting principles generally accepted in the United States of America.

c. The methods of measurement or presentation have not changed from those used in the prior period.
d. We believe the significant assumptions or interpretations underlying the measurement or presentation of the supplementary information, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.

Required Supplementary Information

39. With respect to the required supplementary information accompanying the financial statements:
    a. We acknowledge our responsibility for the presentation of the required supplementary information in accordance with accounting principles generally accepted in the United States of America.
    b. We believe the required supplementary information, including its form and content, is measured and fairly presented in accordance with accounting principles generally accepted in the United States of America.
    c. The methods of measurement or presentation have not changed from those used in the prior period.
    d. We believe the significant assumptions or interpretations underlying the measurement or presentation of the required supplementary information, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.

Uniform Guidance (2 CFR 200)

40. With respect to federal awards, we represent the following to you:
    j. We are responsible for understanding and complying with and have complied with the requirements of the Uniform Guidance.
    k. We are responsible for the preparation and presentation of the schedule of expenditures of federal awards in accordance with the Uniform Guidance.
    l. We believe the schedule of expenditures of federal awards, including its form and content, is fairly presented in accordance with the Uniform Guidance.
    m. The methods of measurement or presentation have not changed from those used in the prior period.
    n. We believe the significant assumptions or interpretations underlying the measurement or presentation of the schedule of expenditures of federal awards, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.
    o. We are responsible for including the auditor's report on the schedule of expenditures of federal awards in any document that contains the schedule and that indicates that the auditor has reported on such information.
    p. When the schedule of expenditures of federal awards is not presented with the audited financial statements, management will make the audited financial statements readily available to the intended users of the schedule of expenditures of federal awards no later than the date of issuance by the entity of the schedule of expenditures of federal awards and the auditor's report thereon.
    q. We have, in accordance with the Uniform Guidance, identified in the schedule of expenditures of federal awards, expenditures made during the audit period for all awards provided by federal agencies in the form of grants, federal cost-reimbursement contracts, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, food commodities, direct appropriations, and other assistance.

r. We are responsible for complying with the requirements of laws, regulations, and the provisions of contracts and grant agreements related to each of our federal programs and have identified and disclosed to you the requirements of laws, regulations, and the provisions of contracts and grant agreements that are considered to have a direct and material effect on each major federal program; and we have complied, in all material respects, with these requirements.

s. We have provided to you our interpretations of any compliance requirements that have varying interpretations.

t. We are responsible for establishing and maintaining effective internal control over compliance requirements applicable to federal programs that provide reasonable assurance that we are managing our federal awards in compliance with laws, regulations, and the provisions of contracts and grant agreements that could have a material effect on our federal programs. Also, no changes have been made in the internal control system to the date of this letter that might significantly affect internal control, including any corrective action taken with regard to significant deficiencies, including material weaknesses, reported in the schedule of findings and questioned costs.

u. We have made available to you all contracts and grant agreements (including amendments, if any) and any other correspondence with federal agencies or pass-through entities relating to federal programs.

v. We have received no requests from a federal agency to audit one or more specific programs as a major program.

w. We have identified and disclosed to you all amounts questioned and any known noncompliance with the requirements of federal awards, including the results of other audits or program reviews. We also know of no instances of noncompliance occurring subsequent to the end of the period audited.

x. We have charged costs to federal awards in accordance with applicable cost principles, including amounts claimed or used for matching determined in accordance with relevant guidelines in the Uniform Guidance.

y. We have made available to you all documentation related to the compliance requirements, including information related to federal program financial reports and claims for advances and reimbursements.

z. Federal program financial reports and claims for advances and reimbursements are supported by the books and records from which the basic financial statements have been prepared (and are prepared on a basis consistent with the schedule of expenditures of federal awards).

aa. The copies of federal program financial reports provided to you are true copies of the reports submitted, or electronically transmitted, to the respective federal agency or pass-through entity, as applicable.

bb. We have monitored subrecipients to determine if they have expended pass-through assistance in accordance with applicable laws and regulations and have met the requirements of the Uniform Guidance.

cc. We have issued management decisions timely after the receipt of subrecipients' auditor reports that identified noncompliance with laws, regulations, or the provisions of contracts or grant agreements, and have ensured that the subrecipients have taken the appropriate and timely corrective action on findings.

dd. We have considered the results of subrecipients' audits and have made any necessary adjustments to our own books and records.

ee. We are responsible for and have accurately prepared the summary schedule of prior audit findings to include all findings required to be included by the Uniform Guidance, and we have provided you with all information on the status of the follow-up on prior audit findings by federal awarding agencies and pass-through entities, including all management decisions.

ff. We have disclosed to you the findings received and related corrective actions taken for previous audits, attestation engagements, and internal or external monitoring that directly relate to the objectives of the compliance audit, including findings received and corrective actions taken from the end of the period covered by the compliance audit to the date of the auditor's report.

gg. We are responsible for and have accurately completed the appropriate sections of the Data Collection Form as required by the Uniform Guidance, and we are responsible for preparing and implementing a correction action plan for each audit finding.

hh. We have disclosed all contracts or other agreements with service organizations and disclosed to you all communications from these service organizations relating to noncompliance at the organizations.

ii. We have reviewed, approved, and taken responsibility for the financial statements and related notes.

jj. We have disclosed to you the nature of any subsequent events that provide additional evidence with respect to conditions that existed at the end of the reporting period that affect noncompliance during the reporting period.

Sue F. McCormick, Chief Executive Officer

Nicolette N. Bateson, CPA, Chief Financial Officer/ Treasurer

GREAT LAKES WATER AUTHORITY

Schedule of Adjustments Passed (SOAP)

For the June 30, 2018 Audit

In accordance with generally accepted auditing standards, we have prepared the following schedule of proposed audit adjustments, which we believe are immaterial both individually and in the aggregate. We are providing this schedule to both management and those charged with governance to receive their assurance that they agree that the amounts listed below are not material to the financial statements, either individually or in the aggregate, and do not need to be recorded.

	Effect of Passed Adjustment - Over(Under)Statement				
	Assets	Liabilities	Net Position	Revenues	Expenses
Water fund					
Prior year overstated health care claims claims (corrected in FY 2018)	$ -	$ -	$ (597,922)	$ -	$ (597,922)
Misstatement as a percentage of total revenues - water fund	0.0%	0.0%	-0.2%	0.0%	-0.2%
Business-type activities					
Prior year overstated health care claims claims (corrected in FY 2018)	$ -	$ -	$ (597,922)	$ -	$ (597,922)
Misstatement as a percentage of total revenues - business-type activities	0.0%	0.0%	-0.1%	0.0%	-0.1%

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Alicia Haskin, Management Professional – Intergovernmental Relations

Re: Update: GLWA and DWSD Shared Services True-Up Status FY 2017 and Beyond

Background: The Great Lakes Water Authority (GLWA) and the Detroit Water and Sewerage Department (DWSD) are parties to a Shared Services Agreement (the Agreement) dated December 1, 2015. This agreement provides the framework for shared services for the efficient operation of both entities.

On a monthly basis, an invoice is prepared based on an agreed upon annual budget. While the intent is for the monthly invoice to represent actual costs, the reality is that the timing of certain vendor invoices and accumulation of internal charges requires a "true-up" process. That being said, the intent is to condense the true-up timeline each fiscal year.

The Shared Service Agreement (Section 5.1) states that:

> "Each invoice, whether for Services provided regularly or "as-needed," shall itemize the costs and charges by Services provided under each Service Delivery Schedule, and shall provide sufficient detail to the Subscribing Party to identify the Services performed and the basis for the charges. A Performing Party may only charge the Service Costs for Services provided."

In addition, the parties have come to realize that an exact itemization generates a level of detailed analysis that is not cost-effective to produce. The data and experience garnered from the first three years of the program are leading to a more efficient method of calculating costs while staying true to the intent of Section 5.1 above.

Analysis: The following is an update of the True-Up process by fiscal year.

Fiscal Year 2017 Update

The table below lists the status of each Shared Service based upon GLWA's staff analysis. As of the last meeting on December 18, 2018 between the GLWA and DWSD Shared Services Teams, there was no known issues identified by DWSD with the true-up materials submitted by GLWA for the items identified as "Resolved."

Legend for FY 2017 Status

Not Received	True-Up has not been received
In Process	True-Up calculation has been completed but waiting on management review/approval
Under Review	GLWA is reviewing DWSD prepared True-Up
Resolved	True-Up is completed and agreed to

FY 2017 Shared Service True-up Status

Shared Service	Description	Provider	Status
OPS-005	Security and Integrity	GLWA	In Process
OPS-008	Systems Control	GLWA	In Process
ITS-001	Retail AMR	GLWA	In Process
ITS-002	Customer Service Tech Suite	GLWA	In Process
ITS-003	See Click Fix	GLWA	In Process
ITS-004	WAM	GLWA	In Process
ITS-005	Mobile Workforce Management	GLWA	In Process
ITS-006	ESRI-GIS	GLWA	In Process
ITS-007	DADS	GLWA	In Process
ITS-008	Tibco	GLWA	In Process
ITS-009	Infrastructure	GLWA	In Process
Training	Training	GLWA	In Process
LS-001 - LS-003	Legal Services	Both	In Process
OPS-001	Fleet	DWSD	Not Received
OPS-003	As Needed Field Service	DWSD	Not Received
DoIT-001	Financial Information System	City of Detroit	Not Received
DoIT-002	Radios	City of Detroit	Not Received
DoIT-003	Customer Service Tech Suite	City of Detroit	Not Received
OPS-004	Water Quality	GLWA	Resolved
OPS-002	MISS DIG	DWSD	Under Review
OPS-006	Facilities	DWSD	Under Review
~~OPS-007~~	~~WWTP IWC Underground Storage Tank~~	N/A – not needed	
~~PRO-001~~	~~Applications Analyst~~	N/A – not needed	

The following list provides additional explanations for FY 2017 Shared Services.

OPS-002 – MISS DIG: Although this service was to be provided by DWSD, DWSD was unable to provide the level of service as stated in the agreement due to a staffing shortage. GLWA provided some of the service to DWSD on an interim basis. The GLWA True-Up has been provided to DWSD and is resolved; the DWSD analysis has been received and is under review by GLWA.

OPS-008 – Systems Control: In the process of completing the FY 2016 True-up for this Shared Service, the details regarding the allocation of facilities and sites was not available. GLWA staff attempted to recreate the allocation based upon best available information and shared the information with DWSD. No consensus was reached and the original allocation in the Shard Services Agreement was used.

There are also costs not identified in the Shared Services Agreement at the time of the bifurcation that need to be considered. The following is the status of these costs.

- Lakeshore Invoices – In Process
- Bank/Credit Card Fees - Resolved
- Public Finance – In Process

The following is a list of costs paid by DWSD and the related status.

- Fuel – Under Review
- WAM Licenses – Under Review

Next Steps FY 2017: As the True-Ups are completed they are provided to DWSD. Meetings are held at least monthly to discuss the status of the completion and resolution of the True-Ups. The next step is a presentation to the leadership for both entities in January 2019 to review the status and to propose cost-effective resolution.

Fiscal Year 2018 Status

The table below lists the status of each Shared Service based upon GLWA's staff analysis.

Shared Service	Description	Provider	Status
ITS-009	Infrastructure	GLWA	10% Complete
OPS-008	Systems Control	GLWA	15% Complete
ITS-001	Retail AMR	GLWA	25% Complete
ITS-003	See Click Fix	GLWA	25% Complete
ITS-004	WAM	GLWA	25% Complete
ITS-005	Mobile Workforce Management	GLWA	25% Complete
ITS-006	ESRI-GIS	GLWA	25% Complete
ITS-008	Tibco	GLWA	25% Complete
Training	Training	GLWA	25% Complete
OPS-004	Water Quality	GLWA	75% Complete
ITS-002	Customer Service Tech Suite	GLWA	75% Complete
ITS-007	DADS	GLWA	75% Complete
LS-001 - LS-003	Legal Services	Both	90% Complete
OPS-001	Fleet	DWSD	Not Received (% Complete not known)
OPS-002	MISS DIG	DWSD	Not Received (% Complete not known)
OPS-003	As Needed Field Service	DWSD	Not Received (% Complete not known)
OPS-006	Facilities	DWSD	Not Received (% Complete not known)
DoIT-001	Financial Information System	City of Detroit	Not Received (% Complete not known)
DoIT-002	Radios	City of Detroit	Not Received (% Complete not known)
DoIT-003	Customer Service Tech Suite	City of Detroit	Not Received (% Complete not known)
OPS-005	Security and Integrity	GLWA	75% Complete; *Badging and Fusion Center
~~OPS-007~~	~~WWTP IWC Underground Storage Tank~~	N/A – not needed	
~~PRO-001~~	~~Applications Analyst~~	N/A – not needed	

*OPS-005 Terminated on June 30, 2017. However, Badging and Fusion Center costs continue to be provided.

Next Steps FY 2018: GLWA and DWSD Shared Services Teams will continue to meet to discuss any open issues for both FY 2017 and FY 2018. The next step is a presentation to the leadership for both entities in January 2019 to review the status and to propose cost-effective resolution.

Fiscal Year 2019 and Beyond Update

The table below lists the scope of each Shared Service based upon GLWA's analysis.

Shared Service	Description	Provider	Scope of Service
ITS-009	Infrastructure	GLWA	**Partial 3/1/19; Final on 6/30/20
ITS-004	WAM	GLWA	**Terminating on 12/31/19
ITS-005	Mobile Workforce Management	GLWA	**Terminating on 12/31/19
ITS-006	ESRI-GIS	GLWA	**Terminating on 6/30/19
ITS-007	DADS	GLWA	**Terminating on 6/30/19
ITS-008	Tibco	GLWA	**Terminating on 6/30/20
OPS-005	Security and Integrity	GLWA	*Badging and Fusion Center
OPS-002	MISS DIG	DWSD	No changes
OPS-003	As Needed Field Service	DWSD	No changes
OPS-004	Water Quality	GLWA	No changes
OPS-006	Facilities	DWSD	No changes
OPS-008	Systems Control	GLWA	No changes
DoIT-001	Financial Information System	City of Detroit	No changes
DoIT-002	Radios	City of Detroit	No changes
DoIT-003	Customer Service Tech Suite	City of Detroit	No changes
Training	Training	GLWA	No changes
LS-001 - LS-003	Legal Services	Both	No changes
OPS-001	Fleet	DWSD	No changes
ITS-002	Customer Service Tech Suite	GLWA	Terminated on 10/1/18
ITS-001	Retail AMR	GLWA	Terminating on 6/30/19
ITS-003	See Click Fix	GLWA	Terminating on 1/1/19
~~OPS-007~~	~~WWTP IWC Underground Storage Tank~~	N/A – not needed	
~~PRO-001~~	~~Applications Analyst~~	N/A – not needed	

*OPS-005 Terminated on 6/30/17. However, Badging and Fusion Center costs continue to be provided.

**Formal termination notice has not been received. However, the DWSD CIO has provided these termination dates to GLWA CIO.

Changes in Services

Please see attached formal notification of termination of services received since January 1, 2018 received for the following.

- Termination Notice for Selected IT Shared Service Agreements dated April 3, 2018 with termination effective October 1, 2018.
    - ITS-001 Retail Automatic Meter Reading Technology Suite
    - ITS-002 Customer Service Technology Suite
    - ITS-003 See Click Fix (Improve Detroit)
- Termination Notice for Selected Elements of IT Shared Service Agreement ITS-009, IT Infrastructure dated August 31, 2018 with termination effective March 1, 2019.
    - Desktop usage and support
    - Printer and FAX usage and support
    - Mobile phone support
    - DWSD dedicated storage usage and support
    - DWSD dedicated server usage and support
    - DWSD dedicated disaster recovery services
    - DWSD dedicated VMWare usage and support
    - Administrative Support
- Extension of Service Request No. 1 dated September 13, 2018 with extension of termination date to January 1, 2019.
    - ITS-001 Retail Automatic Meter Reading Technology Suite
    - ITS-003 See Click Fix (Improve Detroit) – The Element titled "Third party support for See Click Fix (HP Staff)"
- Extension of Services Request No. 2 dated December 12, 2018 with extension of termination date to June 30, 2019.
    - ITS-01 Retail Automatic Meter Reading Technology Suite

Proposed Action: Receive and file report.

Memo

To: Jeff Small, Chief Information Officer, GLWA
Sue M. McCormick, Chief Executive Officer, GLWA

From: Dan Rainey, Chief Information Officer, DWSD

CC: Gary Brown, Director, DWSD
Palencia Mobley, PE, Deputy Director
Debra N. Pospiech, Chief Administrative Officer and General Counsel
Paul Fulton, Applications Delivery Manager
Daniella Okike, Service Delivery Manager

Date: April 3, 2018

Re: Termination Notice for Selected IT Shared Service Agreements

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Pursuant to Article 10, Section 3 of the Shared Services Agreement between City of Detroit and Great Lakes Water Authority, this memo serves as a 180-Day notice that effective October 1, 2018 the City of Detroit Water and Sewerage Department will be terminating the following Information Technology Shared Services provided by the GLWA:

- ITS-001 Retail Automatic Meter Reading Technology Suite
- ITS-002 Customer Service Technology Suite
- ITS-003 See Click Fix (Improve Detroit)

Please let me know if you have any questions or concerns regarding this action.

Regards,



Dan Rainey, Chief Information Officer, DWSD

Memo

To:	Jeff Small, Chief Information Officer, GLWA Sue M. McCormick, Chief Executive Officer, GLWA
From:	Dan Rainey, Chief Information Officer, DWSD
CC:	Gary Brown, Director, DWSD Palencia Mobley, PE, Deputy Director, DWSD Debra N. Pospiech, Chief Administrative Officer and General Counsel, DWSD William Wolfson, Chief Administrative and Compliance Officer, GLWA Paul Fulton, Applications Delivery Manager, DWSD Daniella Okike, Service Delivery Manager, DWSD
Date:	August 31, 2018
Re:	Termination Notice for Selected Elements of IT Shared Service Agreement ITS-009, IT Infrastructure

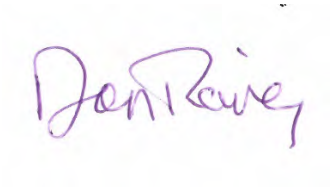
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Pursuant to Article 10, Section 3 of the Shared Services Agreement between City of Detroit and Great Lakes Water Authority, this memo serves as a 180-Day notice that effective March 1, 2019 the City of Detroit Water and Sewerage Department will be terminating the following Information Technology Shared Service Elements provided by the GLWA under ITS-009 IT: Infrastructure

- Desktop usage and support
- Printer and FAX usage and support
- Mobile phone support
- DWSD dedicated storage usage and support
- DWSD dedicated server usage and support
- DWSD dedicated disaster recovery services
- DWSD dedicated VMWare usage and support
- Administrative Support

Please let me know if you have any questions or concerns regarding this action.

Regards,



Dan Rainey, Chief Information Officer, DWSD

Memo

To:	Jeff Small, Chief Information Officer, GLWA Sue M. McCormick, Chief Executive Officer, GLWA
From:	Dan Rainey, Chief Information Officer, DWSD
CC:	Gary Brown, Director, DWSD Palencia Mobley, PE, Deputy Director Debra N. Pospiech, Chief Administrative Officer and General Counsel Paul Fulton, Applications Delivery Manager Daniella Okike, Service Delivery Manager
Date:	September 13, 2018
Re:	Extension of Services Request No.1

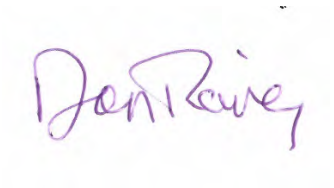
Pursuant to the September 13th memo documenting the agreement around the process to extend an IT shared service beyond a scheduled termination date, this Extension of Services Request is hereby requested for the following IT Shared Services, with an original scheduled Termination Date of October 1, 2018:

- ITS-001 Retail Automatic Meter Reading Technology Suite
- ITS-003 See Click Fix (Improve Detroit) – The Element titled “Third party support for See Click Fix (HP staff)”

The expected duration of Extension of Services Request No. 1 is until January 1, 2019.

Please let me know if you have any questions or concerns regarding this action.

Regards,



Dan Rainey, Chief Information Officer, DWSD

Memo

To:	Jeff Small, Chief Information Officer, GLWA Sue M. McCormick, Chief Executive Officer, GLWA
From:	Dan Rainey, Chief Information Officer, DWSD
CC:	Gary Brown, Director, DWSD Palencia Mobley, PE, Deputy Director Debra N. Pospiech, Chief Administrative Officer and General Counsel Paul Fulton, Applications Delivery Manager Daniella Okike, Service Delivery Manager
Date:	December 12, 2018
Re:	Extension of Services Request No.2

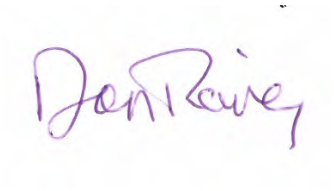
Pursuant to the agreement documenting the process to extend an IT shared service beyond a Revised Scheduled Termination Date, this Extension of Services Request is hereby requested for the following IT Shared Services with a Revised Scheduled Termination Date of January 1, 2019:

- ITS-001 Retail Automatic Meter Reading Technology Suite

The expected duration of Extension of Services Request No. 2 is now revised to June 30, 2019.

Please let me know if you have any questions or concerns regarding this action.

Regards,



Dan Rainey, Chief Information Officer, DWSD

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Status Update: 2018 Contract Alignment Process and Wholesale Water Contract Reopeners Status

Background: The Great Lakes Water Authority (GLWA) model water contract currently provides for designated reopener dates in year 2, year 5 and every 5 years afterwards, until the end of the 30-year term of the contract. In the fall of 2017 the GLWA contract negotiation team met with 33 member communities which are served under the model contract for regularly scheduled reopeners, including one out-of-sequence reopener (Commerce Township) to renegotiate contract values. The next regularly scheduled reopener for most of these member communities is scheduled for 2022. The GLWA contract negotiation team will be meeting with 54 member communities throughout 2018 to reopen their model contracts as part of the Contract Alignment Process (CAP) for those that did not reopen their contracts in 2017.

In addition to the CAP reopeners, GLWA has negotiated water model contracts with the city of Inkster, Gibraltar and Grosse Ile Township, with the city of Trenton anticipated to approve its model contract at its council meeting on December 17th. Meetings with Dearborn have also been held to discuss getting it on a model contract.

What is the CAP?

As part of the 2017 customer outreach meetings, member communities asked GLWA to implement strategies to achieve goals of water charge stability and equity. As part of this strategy, members asked for alignment of the model contract reopener to a common schedule to minimize the annual charge volatility created by changing contract demands which come as a result of the contract amendments.

The CAP involves all model contract customers that did not have a scheduled reopener in 2017 and requests that those member communities reopen their model contracts in 2018 ("2018 reopeners") regardless of their current reopener schedule. As part of the 2018 reopener meetings, the contract reopener schedule within each customer contract is

amended to change the next regularly scheduled reopener date to 2022 and every 4 years thereafter.

The CAP concept was presented by GLWA at the October 10th and October 26th Water Charges Workgroup meetings and was approved by the member communities at the December 20, 2017 One Water Partnership meeting.

CAP Progress

Between March 8, 2018 and October 31, 2018, the team has met with all of the 54 scheduled CAP reopeners plus four member partners previously on old contracts (Gibraltar, Inkster, Grosse Ile and Trenton) for a total of 58 possible contract amendments. As of December 18th, 57 contract amendments have been drafted and sent to the member partner community for local approval. Of the contracts sent, 57 have been approved by the member partner's legislative body. The only member partner that has not been sent a contract amendment is Flat Rock because the contract negotiation team is working to negotiate final values with them. **Table 1** shows the progress for each member partner as part of the CAP.

The deadline for member partner approval by its legislative body is January 11, 2019. Once the contract amendments are approved and returned to GLWA, the contract will be presented to the GLWA Board of Directors for approval. See attached table for the status of each amendment in the approval process.

Proposed Action: Receive and file report.

Table 1

2018 Contract Alignment Process
Status Update
As of December 19, 2018

	Member Partner	Meeting Held	Contract Amendment Sent to Member Partner	Contract Amendment Approved by Member Partner	Contract Amendment Approved by GLWA Board
1	Almont, Village of	✓	✓	✓	
2	Ash Township	✓	✓	✓	✓
3	Berlin Township	✓	✓	✓	✓
4	Brownstown Township	✓	✓	✓	✓
5	Bruce Township	✓	✓	✓	
6	Chesterfield Township	✓	✓	✓	✓
7	Clinton Township	✓	✓	✓	✓
8	Commerce Township	✓	✓	✓	✓
9	Ecorse	✓	✓	✓	✓
10	Farmington City	✓	✓	✓	✓
11	Farmington Hills	✓	✓	✓	✓
12	Ferndale	✓	✓	✓	
13	Flat Rock	✓			
14	Flint	✓	✓	✓	
15	Garden City	✓	✓	✓	✓
16	Gibraltar	✓	✓	✓	✓
17	Grosse Ile	✓	✓	✓	
18	Grosse Pointe Shores	✓	✓	✓	✓
19	Grosse Pointe Woods	✓	✓	✓	
20	Hamtramck	✓	✓	✓	✓
21	Harper Woods	✓	✓	✓	✓
22	Harrison Township	✓	✓	✓	✓
23	Hazel Park	✓	✓	✓	✓
24	Huron Township	✓	✓	✓	✓
25	Imlay City	✓	✓	✓	
26	Inkster	✓	✓	✓	✓
27	Keego Harbor	✓	✓	✓	
28	Lapeer	✓	✓	✓	
29	Lenox Township	✓	✓	✓	
30	Lincoln Park	✓	✓	✓	✓
31	Livonia	✓	✓	✓	✓
32	Macomb Township	✓	✓	✓	✓
33	Madison Heights	✓	✓	✓	
34	Mayfield	✓	✓	✓	
35	Melvindale	✓	✓	✓	✓
36	New Haven, Village of	✓	✓	✓	✓
37	NOCWA	✓	✓	✓	

Table 1

2018 Contract Alignment Process
Status Update
As of December 19, 2018

	Member Partner	Meeting Held	Contract Amendment Sent to Member Partner	Contract Amendment Approved by Member Partner	Contract Amendment Approved by GLWA Board
38	Novi	✓	✓	✓	✓
39	Oak Park	✓	✓	✓	✓
40	Oakland County Drain Comm.	✓	✓	✓	
41	Plymouth Township	✓	✓	✓	✓
42	River Rouge	✓	✓	✓	✓
43	Riverview	✓	✓	✓	
44	Rockwood	✓	✓	✓	✓
45	Romeo	✓	✓	✓	✓
46	Romulus	✓	✓	✓	✓
47	Royal Oak Township	✓	✓	✓	
48	Shelby Township	✓	✓	✓	✓
49	SOCWA	✓	✓	✓	✓
50	South Rockwood	✓	✓	✓	✓
51	Southgate	✓	✓	✓	✓
52	St. Clair County-Burtchville Township	✓	✓	✓	✓
53	Sumpter Township	✓	✓	✓	✓
54	Sylvan Lake	✓	✓	✓	
55	Trenton	✓	✓	✓	
56	Walled Lake	✓	✓	✓	✓
57	Warren	✓	✓	✓	✓
58	Westland	✓	✓	✓	✓

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Nicolette N. Bateson, CPA, Chief Financial Officer/Treasurer

Re: Discussion Draft: FY 2020 & 2021 Biennial Budget and Five-Year Plan

Background: In accordance with service agreements with Great Lakes Water Authority (GLWA) member partners, charges for the next fiscal year are annually presented at the end of January each year. To accommodate that schedule, the budget process for the GLWA begins early.

Analysis: Attached are the following related to discussion of the upcoming FY 2020 & 2021 Biennial Budget and Five-Year Plan.

- Memo from The Foster Group (TFG) that provides some history and context to GLWA's budget and charges cycle. Further, TFG provides a list of key open items that need to be resolved in January to best achieve completeness of charge proposals as well as support timely approval of the budget and charges.
- Draft operating area budgets for operations and maintenance activities.
- Schedule of upcoming activities and due dates related to the budget cycle .
- Capital Improvement Program funding plans from the most recently completed official statements.

Proposed Action: Receive for further review and discussion at the next Audit Committee meeting on January 4, 2019 at 8 am.

TFG
THE FOSTER GROUP

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MEMORANDUM

Preliminary FY 2020 Budget/Charge Planning
Executive Summary

December 19, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for preliminary observations regarding the planning parameters and open issues impacting potential GLWA proposed budgets, cost of service allocations, and water and sewer charges for FY 2020. This memorandum is intended to introduce our initial perspectives on those elements in an executive summary format. We have included historical information to provide some context to the discussion in both this summary introduction and the accompanying more detailed commentary and exhibits.

Background / Recent History

Anytime the relative change in GLWA budgets and charges is discussed it is important to provide context regarding the "4% increase limitation" set forth in the Leases that effectively established GLWA. Specifically, Article 5.6 of the Lease(s) states:

> *"As provided in the MOU, through the Fiscal Year ending June 30, 2025, the Water (Sewer) System is assumed to experience annual increases in the Authority Revenue Requirement of not more than 4%; provided however, this limitation shall not be applicable if the Authority Revenue Requirement must increase beyond the 4% assumption in order to satisfy the Rate Covenant or to pay the cost of improvements to the Leased Water (Sewer) Facilities that are required to be made by Applicable Laws."*

Clearly the intent of the foundational documents was to target annual increases in the Authority ***revenue requirement*** that did not exceed 4%, while recognizing that other elements might impact annual ***charge*** adjustments that varied from this amount. These "other elements" include varying levels of baseline revenues associated with water sales and demographic changes in the Authority customer base, and varying levels of "non-charge" revenue (such as investment earnings) that are eligible to meet the total revenue requirement.

This understanding is essential when reviewing the annual changes in revenue requirements and charges that have been implemented by GLWA since its inception, as illustrated in the table below.

GLWA Budget / Charge Adjustment History

	FY 2017	FY 2018	FY 2019	Avg to Date
Revenue Requirement Increase				
Water Supply System	4.0%	-0.9%	1.0%	*1.3%*
Sewage Disposal System	4.0%	0.3%	1.0%	*1.8%*
Combined Water and Sewer	4.0%	-0.2%	1.0%	*1.6%*
O&M Budget Increase				
Water Supply System	4.0%	8.7%	0.0%	*4.2%*
Sewage Disposal System	4.0%	8.7%	0.0%	*4.2%*
Combined Water and Sewer	4.0%	8.7%	0.0%	*4.2%*
Average Charge Increase				
Water Supply System	4.5%	1.9%	1.6%	*2.7%*
Sewage Disposal System	8.3%	-0.7%	0.1%	*2.5%*
Combined Water and Sewer	6.7%	0.3%	0.7%	*2.5%*
Planned I&E / Reserve Deposits - *$ millions*				
Water Supply System	*23.8*	*34.4*	*39.1*	
Sewage Disposal System	*14.1*	*14.6*	*12.2*	
Combined Water and Sewer	*37.9*	*49.1*	*51.3*	

The table presents key metrics for each year, including annual changes in revenue requirements, operation and maintenance expense budgets, and "average" System charges. The figures in green at the bottom of the table represent the planned revenue requirements that are remaining in the Master Bond Ordinance ("MBO") flow of funds after addressing requirements for operating expense, debt service, and the fixed MBO requirements including the Lease Payment. We've often referred to these amounts as "the bottom line" as they reflect amounts available to the Improvement and Extension Fund and/or reserve funds. Growth in these amounts is key to the overall GLWA financial improvement and sustainability strategy, as articulated in the foundational agreements.

Let's briefly discuss the developments for each fiscal year plan.

FY 2017 was the initial year for which GLWA had control over budgets and charges. The FY 2017 overall revenue requirement increase was established equivalent to the 4% promise for both the Water and Sewer systems, and the operating expense budgets were increased by the same amount. The Water average charge increase was slightly higher than the revenue requirement increase due to slightly lower revenues from projected water sales and investment income. The Sewer average charge increase was also higher than the revenue requirement increase. This metric is complicated by a couple of matters. Charges in the prior year (FY 2016) included amounts related to the final year of the "Five Year Look-Back" adjustments that had the effect of increasing revenues to recover amounts that were not included in budgeted revenue requirements. Unwinding this element created a negative impact on baseline

revenues[1]. Also, the FY 2017 Sewer charges included a significant amount related to the "bad debt true-up" related to Highland Park, which was included as a charge requirement for the suburban wholesale charges, but not as a budgeted revenue requirement[2].

FY 2018 marked the first year for which significant debt service savings associated with the initial GLWA revenue bond transactions in October 2016 were reflected in the budgeted revenue requirements. These savings supported an initially proposed FY 2018 financial plan that included a 2% budgeted revenue requirement increase for the Sewer system, and a "flat" (no increase) budgeted revenue requirement for the Water system. Final modifications as part of the budget / charge review process lowered the budgeted revenue requirements to those shown in the table, and actually resulted in a revenue requirement **decrease** of approximately one percent for Water. The operating budget increase of 8.7% for both systems is a bit misleading. GLWA made an administrative change regarding how certain activities, such as purchases of minor equipment, were budgeted. In prior budgets, these amounts were assumed to be "capitalizable" and were effectively addressed via the "bottom line" portion of the budget. GLWA realized that these amounts were more appropriately treated as operating expenses and included them in the operating budget for FY 2018. This $20 million budget reallocation had the effect of turning a budget increase of less than two percent to the 8.7% shown in the table. The average FY 2018 charge adjustment for Water was actually an increase despite the budgeted revenue requirement decrease. This reflected the planned exit of Genesee County as a full-service water customer during FY 2018, and the resulting loss of baseline revenues. Conversely, the average FY 2018 charge adjustment for Sewer was actually a small decrease despite the budgeted revenue requirement increase. This also results from bad debt true-up adjustments for the suburban wholesale and Detroit customer classes, which are included as charge requirements but not as budgeted revenue requirements. The FY 2018 suburban wholesale charge requirements for Highland Park bad debt were reduced by $1.8 million from FY 2017 levels[3], and the baseline revenues for FY 2018 included $4.2 million for Detroit bad debt true-up, which was not in prior revenue projections for purposes of these analyses[4].

The initially proposed financial plans for FY 2019 included 2% budgeted revenue requirement increases for both the Water and Sewer systems. These initial plans sought to modify the allocation of certain Administrative and Centralized Services functions between the Water and Sewer operating budgets. Initial analyses indicated that more of these costs should be allocated to Water, and the preliminary operating expense budgets reflected a phased approach to reflect those analyses. As a result, initially the Water O&M budget increase was 3.1% and the Sewer O&M budget increase was 1.1%. Overall the preliminary O&M budget increase was just under 2.0%. Final modifications as part of the budget / charge review process resulted in a reduction of the overall budgeted revenue requirement increases from 2.0% to 1.0%, and a decision to

[1] In hindsight, there are other analytical approaches that could change how the Sewer "charge increase" for FY 2017 is reflected. We've opted to maintain the approach that resulted in previously published information.
[2] The impact of Highland Park bad debt expense on Sewer and Water charges is discussed in a separate document nearby.
[3] Ibid footnote 2.
[4] Ibid footnote 1 for FY 2018.

accommodate the revised totals by maintaining the FY 2019 O&M budgets at FY 2018 levels for both the Water and Sewer systems. As a result, the initially envisioned phased allocation adjustment regarding Administrative and Centralized Services functions was not reflected in the FY 2019 budget. The average FY 2019 charge adjustment for Water was slightly higher than the revenue requirement increase due to slightly lower projected investment income. The average FY 2019 charge adjustment for Sewer was lower than the budgeted revenue requirement increase, again reflecting the impact of bad debt true-up adjustments. The FY 2019 suburban wholesale charge requirements for Highland Park bad debt were reduced by $2.5 million from FY 2018 levels[5].

To summarize the developments for the three fiscal years for which GLWA has established financial plans and charges:

- The average annual increase in budgeted . . .
    - Revenue requirements has been 1.6%, slightly higher for Water and slightly lower for Sewer;
    - Operation and maintenance expense has been 4.2%;
        - *This increase reflects a modified budget recognition of certain elements such as purchases of minor equipment.*
    - Average charges to Customers has been approximately 2.5% for both Water and Sewer.
- The financial plans have produced planned levels of revenues "available to the bottom line" that are comparable to the originally projected levels envisioned in the feasibility forecasts established at the creation of the Authority and the accompanying $50 million annual Lease Payment – ***despite lower revenue requirement and charge increases than originally envisioned***. These successful financial planning "bottom line" results are in large part due to:
    - Stabilized water and sewer revenues as a result of strategic charge modifications;
    - Continued executive / managerial controls on operating expenses;
    - The ability to refinance outstanding debt at lower interest rates and to leverage a fundamental premise of the Authority;
    - A lower than originally forecasted level of investment in capital improvements.

Material providing additional detail of the historical summary presented above is presented in the exhibits accompanying this memorandum.

[Remainder of page intentionally left blank]

[5] Ibid footnote 2.

FY 2020 Planning - Evolution

Now let's address the various depictions of the FY 2020 financial plan. For purposes of this discussion we've established four scenarios.

A. Original plan from 2nd year of the FY 2019 Biennial Budget
B. Updated forecast resulting from the Series 2018 bond sale results
C. Initial planning level budget targets
D. Working version of budget as of 12/18/18

The table below presents key metrics for each FY 2020 scenario, in the same format previously presented for the historical financial plans.

FY 2020 GLWA Budget / Charge Planning

	FY 2019 Biennial Budget A	Bond Sale Forecast Update B	Initial Planning Budget C	Working Budget as of 12/18/18 D
Revenue Requirement Increase				
Water Supply System	4.0%	4.0%	**3.5%**	3.5%
Sewage Disposal System	4.0%	4.0%	**3.5%**	3.5%
Combined Water and Sewer	4.0%	4.0%	**3.5%**	3.5%
O&M Budget Increase				
Water Supply System	2.0%	2.0%	2.0%	**9.6%**
Sewage Disposal System	2.0%	2.0%	2.0%	**0.4%**
Combined Water and Sewer	2.0%	2.0%	2.0%	**4.0%**
Average Charge Increase				
Water Supply System	4.1%	**2.1%**	1.6%	1.6%
Sewage Disposal System	4.0%	**3.1%**	2.6%	2.1%
Combined Water and Sewer	4.0%	**2.7%**	2.2%	1.9%
Planned I&E / Reserve Deposits - *$ millions*				
Water Supply System	*42.2*	*45.2*	*43.5*	*34.3*
Sewage Disposal System	*20.5*	*26.8*	*24.4*	*27.4*
Combined Water and Sewer	*62.6*	*71.9*	*67.9*	*61.7*

Herewith a brief introduction of each financial plan scenario.

A. Original plan from 2nd year of the FY 2019 Biennial Budget
   - 4% revenue requirement increase;
   - 2% O&M budget increase;
     - *Uniform Water / Sewer*

- Charge increases that approximate revenue requirement increases.
- Planned "bottom line" contributions consistent with the originally projected levels envisioned in the feasibility forecasts established at the creation of the Authority.
  - *Higher for Water, slightly lower for Sewer*

B. Updated forecast resulting from the Series 2018 bond sale results
- 4% revenue requirement increase;
- 2% O&M budget increase;
  - *Uniform Water / Sewer*
- Lower charge increases than revenue requirement increases due to recognition of higher forecasted investment income.
  - *Direct result of recognizing benefits of active investment strategies*
- Recognition of debt service savings achieved via the Series 2018 bond sales.
  - *Resulting increase in "bottom line" results*

C. Initial planning level budget targets
- 3.5% revenue requirement increase;
- 2% O&M budget increase;
  - *Uniform Water / Sewer*
- Lower charge increases than B due to lower "top line" targeted revenue requirement increase;
  - *Resulting slight decrease in "bottom line" results*

D. Working version of budget as of 12/18/18
- 3.5% revenue requirement increase;
- 4% O&M budget increase;
  - *Overall increase from 2.0% to 4.0% attributable to lower shared services credit from DWSD and new projects in the Planning Group*
  - *Differential Water / Sewer increases reflecting additional review of specific Centralized and Administrative services*
- No change in Water charge increase compared to C;
- Slight reduction in Sewer charge increase compared to C as a result of lower impact of Highland Park bad debt requirements[6]
- Slight reduction in overall combined charge increase compared to C, but . . .
  - *Lower overall reduction in forecasted "bottom line" results, and a reallocation between Water and Sewer*

[6] Ibid footnote 2

- *These figures are approximately $5 million higher (for both Water and Sewer) than those in the feasibility forecasts established at the creation of the Authority*

Material providing additional detail on each of these scenarios is presented in the exhibits accompanying this memorandum.

FY 2020 Planning – Ongoing Review

The preliminary "working version" scenario introduced above remains under review, including specific departmental budget requests. In addition, there are several parallel investigations regarding cost of service allocations that could impact how the proposed budget / charges impact individual Customers. These include:

- Ongoing review of the most appropriate assignment of "Centralized Services" and "Administrative Services" support costs to the Water and Sewer funds, and to cost pools within those funds;
- The potential operating agreement with OMID, and the impact of such on the GLWA revenue requirements and revenue requirement allocations to OMID and to other Sewer Customers;
- The impact on Water cost of service allocations and charges of:
  - *The contract alignment project (CAP) and the impact on suburban wholesale master metered units of service;*
  - *The incorporation of the UoS study phase 2 findings regarding units of service for non-master metered Customers (Detroit, Dearborn, Highland Park)*
- Incorporation of DWSD Local System budgets and financial plans;
- Budget and cost allocation impacts of potential changes in the GLWA / DWSD definitions of:
  - *Transmission / distribution main responsibility; and*
  - *Service provided by DWSD to GLWA facilities*

We continue diligent review on each of these issues and in our preparation of the FY 2020 Cost of Service Study and the accompanying proposed wholesale service charges for FY 2020.

We are prepared to discuss this matter at your convenience.

GLWA Budget / Charge Adjustment History

Water Supply System

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		Annual Revenue Requirement Summary - $				Annual Change - $			Annual Change - %			Life to Date Change		
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	$	%	Annl %
1	Rev Req't Increase		4.0%	-0.9%	1.0%								*4.1%*	*1.3%*
2	O&M Budget Increase		4.0%	8.7%	0.0%								*13.0%*	*4.2%*
3	Average Charge Increase *[see Line 18]*		*4.5%*	*1.9%*	*1.6%*								*8.2%*	*2.7%*
4	Budgeted O&M	107.6	111.9	121.6	121.6	4.3	9.7	0.0	*4.0%*	*8.7%*	*0.0%*	14.0	*13.0%*	*4.2%*
5	Pension Obligation O&M	6.0	6.0	6.0	6.0	0.0	0.0	0.0	*0.0%*	*0.0%*	*0.2%*	0.0	*0.2%*	*0.1%*
6	Total O&M Expense	113.6	117.9	127.6	127.6	4.3	9.7	0.0	*3.8%*	*8.2%*	*0.0%*	14.0	*12.3%*	*3.9%*
7	Debt Service	151.8	159.3	135.5	134.2	7.4	(23.8)	(1.2)	*4.9%*	*-15.0%*	*-0.9%*	(17.6)	*-11.6%*	*-4.0%*
8	MBO Requirements	30.5	30.2	30.6	30.4	(0.3)	0.4	(0.2)	*-1.1%*	*1.4%*	*-0.5%*	(0.1)	*-0.2%*	*-0.1%*
9	I&E / Reserve Deposits	22.5	23.8	34.4	39.1	1.3	10.6	4.7	*6.0%*	*44.5%*	*13.6%*	16.6	*73.9%*	*20.3%*
10	Total Gross Revenue Req'ts	318.5	331.2	328.1	331.4	12.7	(3.1)	3.3	*4.0%*	*-0.9%*	*1.0%*	12.9	*4.1%*	*1.3%*
11	less: Investment Income	(3.9)	(3.2)	(4.2)	(3.8)	0.7	(1.1)	0.4	*-18.6%*	*33.7%*	*-9.7%*	0.1	*-1.8%*	*-0.6%*
12	Net Revenue Requirements	314.6	328.0	323.9	327.6	13.5	(4.2)	3.7	*4.3%*	*-1.3%*	*1.1%*	13.0	*4.1%*	*1.4%*
13	less: Revenue from Non-Contract Cust	0.0	0.0	(7.6)	0.0	0.0	(7.6)	7.6	*0.0%*	*0.0%*	*-100.0%*	0.0	*0.0%*	*0.0%*
14	Accomodation for H/P Bad Debt Expense	1.1	1.1	1.3	1.4	0.0	0.2	0.1	*0.0%*	*16.2%*	*8.4%*	0.3	*25.9%*	*8.0%*
15	Net Rev. Req't. from Charges to Customers	315.7	329.1	317.6	328.9	13.5	(11.6)	11.4	*4.3%*	*-3.5%*	*3.6%*	13.3	*4.2%*	*1.4%*
16	Revenue - Existing Charges *(b)*	315.7	315.1	311.6	323.6	(0.6)	(3.5)	12.0	*-0.2%*	*-1.1%*	*3.8%*	7.9	*2.5%*	*0.8%*
17	Additional Charge Revenue Needed		14.0	5.9	5.3									
18	Charge Increase *(17) / (16)*		*4.5%*	*1.9%*	*1.6%*									
19	*Debt Service Coverage Ratio - Regional*	*1.35*	*1.34*	*1.48*	*1.52*	*(0.01)*	*0.14*	*0.04*	*-0.7%*	*10.5%*	*2.6%*	*0.17*	*12.5%*	*4.0%*
20	*(b)* Based on WAMR Water Sales - m Mcf	13.36	13.17	13.15	13.17	(0.19)	(0.02)	0.03	*-1.4%*	*-0.2%*	*0.2%*	(0.18)	*-1.4%*	*-0.5%*

PRELIMINARY

GLWA Budget / Charge Adjustment History

Sewage Disposal System

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		Annual Revenue Requirement Summary - $				Annual Change - $			Annual Change - %			Life to Date Change		
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	$	%	Annl %
1	Rev Req't Increase		4.0%	0.3%	1.0%								*5.4%*	*1.8%*
2	O&M Budget Increase		4.0%	8.7%	0.0%								*13.0%*	*4.2%*
3	Average Charge Increase *[see Line 18]*		*8.3%*	*-0.7%*	*0.1%*								*7.6%*	*2.5%*
4	Budgeted O&M *(a)*	169.1	175.9	191.1	191.1	6.8	15.2	0.0	*4.0%*	*8.7%*	*0.0%*	22.0	*13.0%*	*4.2%*
5	Pension Obligation O&M	10.8	10.8	10.8	10.8	0.0	0.0	(0.0)	*0.0%*	*0.0%*	*-0.1%*	(0.0)	*-0.1%*	*0.0%*
6	Total O&M Expense	179.9	186.7	201.9	201.9	6.8	15.2	(0.0)	*3.8%*	*8.2%*	*0.0%*	22.0	*12.2%*	*3.9%*
7	Debt Service	216.9	222.4	207.6	214.6	5.5	(14.8)	7.0	*2.6%*	*-6.7%*	*3.4%*	(2.3)	*-1.0%*	*-0.4%*
8	MBO Requirements	41.2	40.9	41.3	41.5	(0.3)	0.4	0.2	*-0.8%*	*1.1%*	*0.4%*	0.3	*0.7%*	*0.2%*
9	I&E / Reserve Deposits	8.2	14.1	14.6	12.2	5.9	0.6	(2.5)	*71.3%*	*4.0%*	*-16.9%*	3.9	*48.0%*	*14.0%*
10	Total Gross Revenue Req'ts	446.2	464.1	465.5	470.2	17.8	1.4	4.7	*4.0%*	*0.3%*	*1.0%*	23.9	*5.4%*	*1.8%*
11	less: Investment Income	(2.3)	(4.1)	(2.8)	(4.6)	(1.8)	1.4	(1.8)	*80.2%*	*-33.2%*	*66.2%*	(2.3)	*100.2%*	*26.0%*
12	Net Revenue Requirements	443.9	460.0	462.7	465.6	16.0	2.8	2.8	*3.6%*	*0.6%*	*0.6%*	21.6	*4.9%*	*1.6%*
13	Regional Bad Debt True-Up Adjustment	0.5	3.5	2.8	1.9	3.0	(0.6)	(0.9)	*626.1%*	*-18.7%*	*-33.4%*	1.4	*292.8%*	*57.8%*
14	Accomodation for H/P Bad Debt Expense	5.6	5.6	4.4	2.8	0.0	(1.2)	(1.6)	*0.6%*	*-21.8%*	*-36.5%*	(2.8)	*-50.1%*	*-20.7%*
15	Net Rev. Req't. from Charges to Customers	450.0	469.0	469.9	470.2	19.0	0.9	0.3	*4.2%*	*0.2%*	*0.1%*	20.2	*4.5%*	*1.5%*
16	Revenue - Existing Charges	443.9	433.2	473.1	470.0	(10.7)	39.9	(3.2)	*-2.4%*	*9.2%*	*-0.7%*	26.0	*5.9%*	*1.9%*
17	Additional Charge Revenue Needed		35.8	(3.2)	0.3									
18	Charge Increase *(17) / (16)*		*8.3%*	*-0.7%*	*0.1%*									
19	*Debt Service Coverage Ratio - Regional*	*1.23*	*1.25*	*1.27*	*1.25*	*0.02*	*0.02*	*(0.02)*	*1.6%*	*1.8%*	*-1.5%*	*0.02*	*1.8%*	*0.6%*

PRELIMINARY

GLWA Budget / Charge Adjustment History

Combined Water and Sewer Systems

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		Annual Revenue Requirement Summary - $				Annual Change - $			Annual Change - %			Life to Date Change		
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	$	%	Annl %
1	Rev Req't Increase		4.0%	-0.2%	1.0%								*4.8%*	*1.6%*
2	O&M Budget Increase		4.0%	8.7%	0.0%								*13.0%*	*4.2%*
3	Average Charge Increase *[see Line 18]*		*6.7%*	*0.3%*	*0.7%*								*7.8%*	*2.5%*
4	Budgeted O&M *(a)*	276.7	287.7	312.6	312.6	11.1	24.9	0.0	*4.0%*	*8.7%*	*0.0%*	36.0	*13.0%*	*4.2%*
5	Pension Obligation O&M	16.9	16.9	16.9	16.9	0.0	0.0	(0.0)	*0.0%*	*0.0%*	*0.0%*	(0.0)	*0.0%*	*0.0%*
6	Total O&M Expense	293.5	304.6	329.5	329.5	11.1	24.9	(0.0)	*3.8%*	*8.2%*	*0.0%*	36.0	*12.3%*	*3.9%*
7	Debt Service	368.7	381.7	343.1	348.8	13.0	(38.6)	5.7	*3.5%*	*-10.1%*	*1.7%*	(19.9)	*-5.4%*	*-1.8%*
8	MBO Requirements	71.7	71.1	71.9	71.9	(0.6)	0.9	(0.0)	*-0.9%*	*1.2%*	*0.0%*	0.2	*0.3%*	*0.1%*
9	I&E / Reserve Deposits	30.7	37.9	49.1	51.3	7.2	11.2	2.2	*23.4%*	*29.5%*	*4.5%*	20.6	*67.0%*	*18.6%*
10	Total Gross Revenue Req'ts	764.7	795.3	793.6	801.6	30.6	(1.7)	7.9	*4.0%*	*-0.2%*	*1.0%*	36.9	*4.8%*	*1.6%*
11	less: Investment Income	(6.2)	(7.3)	(7.0)	(8.4)	(1.1)	0.3	(1.4)	*17.8%*	*-4.0%*	*20.1%*	(2.2)	*35.9%*	*10.8%*
12	Net Revenue Requirements	758.5	788.0	786.6	793.1	29.5	(1.4)	6.5	*3.9%*	*-0.2%*	*0.8%*	34.6	*4.6%*	*1.5%*
13	Net Non Contract Rev/ Regional Bad Debt	0.5	3.5	(4.8)	1.9	3.0	(8.2)	6.7	*626.1%*	*-238.5%*	*-139.1%*	1.4	*292.8%*	*57.8%*
14	Accomodation for H/P Bad Debt Expense	6.7	6.7	5.7	4.2	0.0	(1.0)	(1.5)	*0.5%*	*-15.5%*	*-26.4%*	(2.5)	*-37.5%*	*-14.5%*
15	Net Rev. Req't. from Charges to Customers	765.7	798.2	787.5	799.2	32.5	(10.7)	11.7	*4.2%*	*-1.3%*	*1.5%*	33.5	*4.4%*	*1.4%*
16	Revenue - Existing Charges	759.6	748.3	784.8	793.6	(11.3)	36.4	8.8	*-1.5%*	*4.9%*	*1.1%*	34.0	*4.5%*	*1.5%*
17	Additional Charge Revenue Needed		49.8	2.7	5.6									
18	Charge Increase *(17) / (16)*		*6.7%*	*0.3%*	*0.7%*									
19	*Debt Service Coverage Ratio - Regional*	*1.28*	*1.29*	*1.35*	*1.35*	*0.01*	*0.07*	*0.00*	*0.6%*	*5.2%*	*0.0%*	*0.08*	*5.9%*	*1.9%*

PRELIMINARY

FY 2020 GLWA Budget / Charge Worksheet

Water Supply System

PRELIMINARY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		2019	A Original 2020	B - Updated 2020 from Bond Sale		C - 2020 Planning Target		D - 2020 as of 12/18/18	
		Budget	Budget/Fcst	Budget/Fcst	Variance	Budget/Fcst	Variance	Budget/Fcst	Variance
			A	**B**		**C**		**D**	
1	Rev Req't Increase		*4.0%*	*4.0%*	*0.0%*	*3.5%*	*-0.5%*	*3.5%*	*-0.5%*
2	O&M Budget Increase		*2.0%*	*2.0%*	*0.0%*	*2.0%*	*0.0%*	***9.6%***	*7.6%*
3	Average Charge Increase *[see Line 18]*		*4.1%*	*2.1%*	*-1.9%*	*1.6%*	*-2.4%*	*1.6%*	*-2.5%*
4	Budgeted O&M *(a)*	121.6	124.0	124.0	0.0	124.0	0.0	**133.2**	9.3
5	Pension Obigation O&M	6.0	6.0	6.0	0.0	6.0	0.0	6.0	0.0
6	Total O&M Expense	127.6	130.0	130.0	0.0	130.0	0.0	139.3	9.3
7	Debt Service	134.2	141.9	139.0	(3.0)	139.0	(3.0)	139.0	(3.0)
8	MBO Requirements	30.4	30.5	30.5	(0.0)	30.5	(0.0)	30.5	(0.0)
9	I&E / Reserve Deposits	39.1	42.2	45.2	3.0	43.5	1.3	34.3	(7.9)
10	Total Gross Revenue Req'ts	331.4	344.7	344.7	0.0	343.0	(1.7)	343.0	(1.7)
11	less: Investment Income	(3.8)	(3.7)	(9.3)	(5.5)	(9.3)	(5.5)	(9.3)	(5.5)
12	Net Revenue Requirements	327.6	340.9	335.4	(5.5)	333.7	(7.2)	333.7	(7.2)
13	Regional Bad Debt True-Up Adjustment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Accomodation for H/P Bad Debt Expense	1.4	1.4	1.4	0.0	1.4	0.0	***1.2***	(0.2)
15	Net Rev. Req't. from Charges to Customers	328.9	342.3	336.8	(5.5)	335.1	(7.2)	334.9	(7.4)
16	Revenue - Existing Charges *(b)*	328.9	328.9	329.7	0.8	329.7	0.8	329.7	0.8
17	Additional Charge Revenue Needed	-	13.4	7.1	(6.3)	5.4	(7.9)	5.2	(8.1)
18	Charge Increase *(17) / (16)*	*0.0%*	*4.1%*	*2.1%*	*-1.9%*	*1.6%*	*-2.4%*	*1.6%*	*-2.5%*
19	*Debt Service Coverage Ratio - Regional*	*1.53*	*1.52*	*1.55*	*0.03*	*1.54*	*0.02*	*1.47*	*(0.05)*
	(a) Budgeted O&M Detail								
20	Water Operations	66.6	67.9	67.9	0.0	67.9	0.0	67.9	(0.0)
21	Water Allocation of Centralized	42.6	43.5	43.5	0.0	43.5	0.0	***50.5***	7.0
22	Water Allocation of Administrative	12.3	12.6	12.6	0.0	12.6	0.0	***14.8***	2.2
23	Total Water	121.6	124.0	124.0	0.0	124.0	0.0	133.2	9.3
24	Water Centralized %	*43.0%*	*43.0%*	*43.0%*	*0.0%*	*43.0%*	*0.0%*	***47.2%***	*4.2%*
25	Water Administrative %	*43.0%*	*43.0%*	*43.0%*	*0.0%*	*43.0%*	*0.0%*	***50.0%***	*7.0%*
26	*(b)* Based on Water Sales - m Mcf	13.17	13.17	13.28	0.11	13.28	0.11	13.28	0.11

FY 2020 GLWA Budget / Charge Worksheet

Sewage Disposal System

PRELIMINARY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		2019	A Original 2020	B - Updated 2020 from Bond Sale		C - 2020 Planning Target		D - 2020 as of 12/18/18	
		Budget	Budget/Fcst	Budget/Fcst	Variance	Budget/Fcst	Variance	Budget/Fcst	Variance
			A	B		C		D	
1	Rev Req't Increase		*4.0%*	*4.0%*	*0.0%*	*3.5%*	*-0.5%*	*3.5%*	*-0.5%*
2	O&M Budget Increase		*2.0%*	*2.0%*	*0.0%*	*2.0%*	*0.0%*	***0.4%***	*-1.6%*
3	Average Charge Increase *[see Line 18]*		*4.0%*	*3.1%*	*-0.9%*	*2.6%*	*-1.4%*	*2.1%*	*-1.9%*
4	Budgeted O&M *(a)*	191.1	194.9	194.9	0.0	194.9	0.0	**191.9**	(3.0)
5	Pension Obigation O&M	10.8	10.8	10.8	0.0	10.8	0.0	10.8	0.0
6	Total O&M Expense	201.9	205.7	205.7	0.0	205.7	0.0	202.7	(3.0)
7	Debt Service	214.6	220.7	214.9	(5.8)	214.9	(5.8)	214.9	(5.8)
8	MBO Requirements	41.5	41.6	41.6	(0.0)	41.6	(0.0)	41.6	(0.0)
9	I&E / Reserve Deposits	12.2	20.5	26.8	6.3	24.4	4.0	27.4	7.0
10	Total Gross Revenue Req'ts	470.2	488.5	489.0	0.5	486.6	(1.9)	486.6	(1.9)
11	less: Investment Income	(4.6)	(4.1)	(8.8)	(4.7)	(8.8)	(4.7)	(8.8)	(4.7)
12	Net Revenue Requirements	465.6	484.3	480.1	(4.2)	477.8	(6.6)	477.8	(6.6)
13	Regional Bad Debt True-Up Adjustment	1.9	1.9	1.9	0.0	1.9	0.0	***0.0***	(1.9)
14	Accomodation for H/P Bad Debt Expense	2.8	2.8	2.8	0.0	2.8	0.0	***2.2***	(0.6)
15	Net Rev. Req't. from Charges to Customers	470.2	489.0	484.8	(4.2)	482.4	(6.6)	480.0	(9.0)
16	Revenue - Existing Charges	470.2	470.2	470.2	0.0	470.2	0.0	470.2	0.0
17	Additional Charge Revenue Needed	-	18.8	14.5	(4.2)	12.2	(6.6)	9.7	(9.0)
18	Charge Increase *(17) / (16)*	*0.0%*	*4.0%*	*3.1%*	*-0.9%*	*2.6%*	*-1.4%*	*2.1%*	*-1.9%*
19	*Debt Service Coverage Ratio - Regional*	*1.27*	*1.30*	*1.34*	*0.04*	*1.33*	*0.03*	*1.33*	*0.03*
	(a) Budgeted O&M Detail								
20	Sewer Operations	118.3	120.7	120.7	0.0	120.7	0.0	120.7	0.0
21	Sewer Allocation of Centralized	56.4	57.5	57.5	0.0	57.5	0.0	***56.4***	(1.1)
22	Sewer Allocation of Administrative	16.3	16.7	16.7	0.0	16.7	0.0	***14.8***	(1.9)
23	Total Sewer	191.1	194.9	194.9	0.0	194.9	0.0	191.9	(3.0)
24	Sewer Centralized %	*57.0%*	*57.0%*	*57.0%*	*0.0%*	*57.0%*	*0.0%*	***52.8%***	*-4.2%*
25	Sewer Administrative %	*57.0%*	*57.0%*	*57.0%*	*0.0%*	*57.0%*	*0.0%*	***50.0%***	*-7.0%*

FY 2020 GLWA Budget / Charge Worksheet

Combined Water and Sewer Systems

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		2019 Budget	A Original 2020 Budget/Fcst A	B - Updated 2020 from Bond Sale Budget/Fcst B	Variance	C - 2020 Planning Target Budget/Fcst C	Variance	D - 2020 as of 12/18/18 Budget/Fcst D	Variance
1	Rev Req't Increase		*4.0%*	*4.0%*	*0.0%*	*3.5%*	*-0.5%*	*3.5%*	*-0.5%*
2	O&M Budget Increase		*2.0%*	*2.0%*	*0.0%*	*2.0%*	*0.0%*	***4.0%***	*2.0%*
3	Average Charge Increase *[see Line 15]*		*4.0%*	*2.7%*	*-1.3%*	*2.2%*	*-1.8%*	*1.9%*	*-2.1%*
4	Budgeted O&M *(a)*	312.6	318.9	318.9	0.0	318.9	0.0	**325.2**	6.3
5	Pension Obigation O&M	16.9	16.9	16.9	0.0	16.9	0.0	16.9	0.0
6	Total O&M Expense	329.5	335.8	335.8	0.0	335.8	0.0	342.0	6.3
7	Debt Service	348.8	362.7	353.9	(8.8)	353.9	(8.8)	353.9	(8.8)
8	MBO Requirements	71.9	72.1	72.0	(0.0)	72.0	(0.0)	72.0	(0.0)
9	I&E / Reserve Deposits	51.3	62.6	71.9	9.3	67.9	5.3	61.7	(1.0)
10	Total Gross Revenue Req'ts	801.6	833.1	833.6	0.5	829.6	(3.5)	829.6	(3.5)
11	less: Investment Income	(8.4)	(7.9)	(18.1)	(10.2)	(18.1)	(10.2)	(18.1)	(10.2)
12	Net Revenue Requirements	793.1	825.3	815.5	(9.7)	811.5	(13.7)	811.5	(13.7)
13	Regional Bad Debt True-Up Adjustment	1.9	1.9	1.9	0.0	1.9	0.0	0.0	(1.9)
14	Accomodation for H/P Bad Debt Expense	4.2	4.2	4.2	0.0	4.2	0.0	3.4	(0.8)
15	Net Rev. Req't. from Charges to Customers	799.2	831.3	821.6	(9.7)	817.6	(13.7)	814.9	(16.4)
16	Revenue - Existing Charges	799.2	799.2	799.9	0.8	799.9	0.8	799.9	0.8
17	Additional Charge Revenue Needed	-	32.1	21.6	(10.5)	17.6	(14.5)	15.0	(17.1)
18	Charge Increase *(14) / (13)*	*0.0%*	*4.0%*	*2.7%*	*-1.3%*	*2.2%*	*-1.8%*	*1.9%*	*-2.1%*
19	*Debt Service Coverage Ratio - Regional*	*1.37*	*1.39*	*1.42*	*0.04*	*1.41*	*0.02*	*1.39*	*(0.00)*
	(a) Budgeted O&M Detail								
20	Water Operations	66.6	67.9	67.9	0.0	67.9	0.0	67.9	(0.0)
21	Sewer Operations	118.3	120.7	120.7	0.0	120.7	0.0	120.7	0.0
22	Centralized Services	99.0	101.0	101.0	0.0	101.0	0.0	106.9	5.9
23	Administrative Services	28.7	29.3	29.3	0.0	29.3	0.0	29.6	0.4
24	Total	312.6	318.9	318.9	0.0	318.9	0.0	325.2	6.3

PRELIMINARY

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MEMORANDUM

Highland Park Bad Debt Expense Review — December 10, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for observations regarding the level of Highland Park bad debt expense recognized in the FY 2018 audited financial statements, and a review of how such amounts impact charges to other GLWA Customers. The attached exhibit summarizes our initial analysis, which reflects an update of the approach we've been applying for several years. Herewith a brief introduction:

The year-end working papers supporting the FY 2018 audit reveal an "allowance for doubtful accounts" for Highland Park totaling approximately $38.8 million, and a resulting FY 2018 bad debt expense of approximately $3.46 million, as summarized below.

	Allowance for Doubtful Accts		
	6/30/17	6/30/18	Change *(a)*
Sewer	28,837,730	30,938,511	2,100,781
Sewer Industrial Waste Control *(b)*	1,550,467	1,630,776	80,310
Water	4,941,777	6,221,815	1,280,039
Total *(b)*	35,329,973	38,791,102	3,461,129

(a) The change in the allowance is equivalent to the bad debt expense during the fiscal year, unless any accounts receivable were written off during the year.

(b) Inclundes a small amount not related to Highland Park.

The table indicates the amount for the Sewer System and Water System separately, and also identifies the portion of the Sewer bad debt expense related to Industrial Waste Control ("IWC") charges. Let's address each the Sewer and Water elements separately in terms of how they impact charges to GLWA Customers.

Sewer

At the risk of complicating the instant discussion, some historical background is important to provide context to the discussion.

Terms of the original 1995 **Sewer** Rate Settlement Agreement between the predecessor DWSD and the Suburban Wholesale Contract Customers stipulated that any bad debt expense incurred by City of Detroit Customers would be charged to Detroit Customers, and that any bad debt expense incurred by a Suburban Wholesale Customer would be charged to all Suburban Wholesale Customers. This requirement was originally implemented by including an estimated amount for bad debt expense for the Detroit customer class in prospective charges, and then "trueing it up" via the old Look-Back process. The same approach was applied to Suburban Wholesale Customer bad debt, although originally no prospective amounts were included in charges – rather the actual amounts were recovered via the Look-Back process.

The terms of the 1995 Rate Settlement Agreement were effectively made part of the service agreements when the Federal Court oversight ended, and the bad debt true up provisions were maintained as part of the Rate Simplification Initiative adopted for the FY 2015 sewer charges. However, the old Look-Back process was discontinued as part of Rate Simplification, and the only "true-up" notion carried forward was that related to prospective and actual bad debt expense. Upon formation of GLWA, the "bad debt true up" requirement was included in the water and sewer services agreement between GLWA and the City of Detroit. That agreement also introduced additional provisions to ensure collections from the Detroit customer class, including establishment of a Budget Stabilization Fund and monitoring of actual collections compared to actual revenue requirements.

When GLWA and DWSD representatives were negotiating the 2018 Memorandum of Understanding (the "2018 MOU") they recognized that the Budget Stabilization Fund and monthly monitoring aspects of the agreements were adequate to ensure full collections from the Detroit customer class. The parties realized that the bad debt true-up requirement served only to confuse the issue and create unnecessary volatility. The 2018 MOU eliminated that bad debt true-up aspect - as it relates to the Detroit customer class - from the agreements. However, the original true-up requirement for Suburban Wholesale bad debt expense technically remains in the service agreements with GLWA's Suburban Wholesale Sewer Customers. Which brings us to the discussion of Highland Park sewer bad debt expense . . .

Here is the nutshell summary of the impact on Customer charges, as illustrated in the attached exhibit.

- The FY 2018 Sewer bad debt expense for Highland Park was $2.1 million compared to the $4.39 million prospective amount included in Charges to suburban wholesale Customers; *See Lines 8 and 9.*
- This creates a $2.29 million "credit" due to suburban wholesale Customer related to FY 2018 activity; *See Line 10.*

- Cumulatively since we started this approach after the old 5-year look-back was terminated, the running "true-up" total (the variance between prospective bad debt included in charges and actual bad debt experienced) is $9.59 million; *See Line 5.*
    - This amount includes the $17.3 million that remained at the conclusion of the old Look-Back process; *See Line 1.*
- GLWA had originally embarked on a "phased" recovery of the original amounts, designed to run through FY 2022; *See Lines 11 through 14.*
- Through the end of FY 2019, $8.14 million will have been recognized via the true up amounts included in Charges; *See Line 5, Column 5.*
- This leaves a balance of $1.45 million to recover; *See Line 5, Column 6.*
- Assuming approximate current collection rates continue, it appears that a credit adjustment totaling approximately $1.45 million ***could*** occur for FY 2019; *See Line 6.*
- To the extent this assumption is accepted, I would recommend not including any true-up adjustment in the FY 2020 Charges – as the amounts charged to Customers related to Highland Park bad debt expense through FY 2019 would be precisely equivalent to the actual bad debt expense; *See Line 7, Column 6.*
- I would also consider increasing the assumed collection rate on prospective billings to Highland Park from 50% to 60%;

If accepted, these recommendations would reduce the amounts charged to Suburban Wholesale Sewer Customers related to Highland Park prospective and true-up bad debt from $4.65 million (in the FY 2019 Charges) to $2.2 million in the preliminary FY 2020 Charges. Given the apparent historical balance, and the fact that the original "true-up" notion has been removed from the agreement with the Detroit customer class, it would seem to be reasonable to revisit the application of the true-up concept for Suburban Wholesale bad debt expense.

Water

There are not any contractual nor other agreements on how bad debt expense related to water service to Highland Park should be treated. Starting with the FY 2017 Water service charges, we began effectively increasing charges to ALL Customers (including Detroit) by amounts equivalent to Highland Park's allocated revenue requirement. This approach recognized an assumption that the entire amount of billings for water service to Highland Park would go unpaid. The FY 2018 Water bad debt expense for Highland Park was $1.28 million, which was consistent with the amount we included in the FY 2018 charges.

We are prepared to discuss this matter at your convenience.

Suburban Wholesale Sewer Bad Debt True-Up Adjustment - Highland Park

		(1)	(2)	(3)	(4)	(5)	(6)
	True-Up Recovery History						
		Balance to	Recovered via True-Ups in:				Remaining
	From Line 10	Recover	2017	2018	2019	Total -> 2019	Balance
1	Pre-2016 Bad Debt "True-Up"	17,295,300	3,459,100	3,459,100	3,459,100	10,377,300	6,918,000
2	FY 2016 True-Up	(2,594,000)		(648,500)	(648,500)	(1,297,000)	(1,297,000)
3	FY 2017 True-Up	(2,817,800)			(939,300)	(939,300)	(1,878,500)
4	FY 2018 True-Up	(2,289,200)				0	(2,289,200)
5	Subtotal thru 2018	9,594,300	3,459,100	2,810,600	1,871,300	8,141,000	1,453,300
6	*FY 2019 True-Up Estimate*	***(1,453,300)***				0	(1,453,300)
7	Subtotal thru 2019	8,141,000	3,459,100	2,810,600	1,871,300	8,141,000	0

	True-Up Recovery Amounts						
		Pre-2016	2016	2017	2018	2019	
8	Bad Debt in Prospective Charges	0	5,569,200	5,600,000	4,390,000	2,780,000	
9	Actual Bad Debt	17,295,300	2,975,200	2,782,200	2,100,800	***1,326,700***	**
10	True-Up Variance	17,295,300	(2,594,000)	(2,817,800)	(2,289,200)	(1,453,300)	
	Original Recovery Plan						
11	Years	5	4	3	*Potentially exclude from*		
12	Annual Adjustment	3,459,100	(648,500)	(939,300)	*future True-Up applications*		
13	Starting:	2017	2018	2019			
14	Through	2022	2022	2022			

* * Hypothetical projection designed to illustrate what FY 2019 results would have to be to achieve cumulative zero balance. Reflects collection rate of 76% compared to FY 2018 collection rate of 73%.

Payment History	Billings	Payments	Net	Balance	Collection Rate
FY 2012				10,207,956	
FY 2013	4,987,635	2,206,211	2,781,424	12,989,380	44%
FY 2014	6,980,442	1,612,633	5,367,809	18,357,189	23%
FY 2015	5,553,123	1,444,623	4,108,500	22,465,689	26%
FY 2016	5,612,167	2,022,335	3,589,832	26,055,521	36%
FY 2017	5,802,000	2,309,186	3,492,814	29,548,335	40%
FY 2018	5,657,101	4,108,108	1,548,993	31,097,328	73%
Cumulative	34,592,468	13,703,096	20,889,372		40%

PRELIMINARY

Regional Water System Capital Improvement Plan
Projected Funding Sources

	Fiscal Year Ending June 30,					
	2019	2020	2021	2022	2023	Total
Existing Improvement and Extension Funds *(a)*	242,939,700					242,939,700
Existing Construction Funds *(a)*	140,308,100					140,308,100
Current Revenues	41,939,600	44,181,400	44,059,300	59,580,200	67,694,100	257,454,600
Bond Proceeds *(b)*	155,595,000	0	0	17,600,000	23,600,000	196,795,000
less: Defeasance Requrements for Refunded Bonds	(181,333,500)					
less: Transfer to DWSD Construction Fund *(c)*	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
less: Issuance Expenses *(d)*	25,738,500	0	0	(1,056,000)	(1,416,000)	23,266,500
Net Bond Proceeds Available to Regional System	0	0	0	0	0	0
State Drinking Water Revolving Fund Loans	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
less: Transfer to DWSD Construction Fund *(e)*	(10,500,000)	(4,000,000)	(11,982,000)	0	0	(26,482,000)
Net State DWRF Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
Investment Income	743,000	462,000	408,000	252,000	500,000	2,365,000
Total Funding Sources *(f)*	425,930,400	61,102,400	62,014,300	105,854,200	98,916,100	753,817,400

(a) Estimated balance available June 30, 2018. (Applies only to Fiscal Year 2019).

(b) The Series 2018 Bonds (in 2019). Also includes projected additional future bonds annually starting in 2022. Amounts reflect par value.

(c) Assumes that DWSD CIP financing will be required from additional future bonds.

(d) Includes Underwriter's Discount and other issuance expenses. For 2019, includes net effect of a bond premium, release of accrued debt service reserve amounts, and other issuance expenses. In future years, assumes amount required to fund debt service reserve fund.

(e) Reflects DWRF Loans related to capital improvements to the DWSD Local System.

(f) The difference between the total amount available to finance the capital program and the cost of the program represents funds totaling approximately $94 million available to finance the capital program after 2023.

SOURCE: THE FOSTER GROUP, LLC.

Limits on Future Borrowing

If the Regional Water System does not generate sufficient Revenues to pay for the cost of capital improvements to the Regional Water System, or if other funds are not available, additional funds may have to be borrowed. In the event Additional Bonds are issued, such Additional Bonds would, in some cases, increase the debt service requirements to be serviced by the Revenues of the Regional Water System. In order for GLWA to issue Additional Bonds, certain conditions must be satisfied as described in greater detail above in "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2018 BONDS—Issuance of Additional Bonds."

Local Water System Capital Improvement Plan

DWSD utilizes a five-year Capital Improvement Plan (the "Local CIP" or the "Local Water System CIP") to maintain and improve the reliability of the Local Water System, meet regulatory standards as well as to achieve greater operating and maintenance efficiency. The Local CIP must be approved by a supermajority of at least five members of the Board of Water Commissioners ("BOWC").

Pursuant to the Water and Sewer Services Agreement, no later than February 1 of each year, the City shall develop and provide the Authority with the Local Water System CIP. The Local Water System CIP must include the capital improvements and an estimate of the costs which the City plans to undertake

Table 5a
GLWA Wholesale System Capital Improvement Program Financing Plan

Line No.	Item	Fiscal Year Ending June 30, 2019	2020	2021	2022	2023	Total	
		$	$	$	$	$	$	
	Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900	
2	Major Capital Improvement Program *(a)*	105,183,000	100,300,000	100,300,000	110,900,000	110,900,000	527,583,000	
3	Total Financing Requirements	111,140,000	105,110,900	104,731,800	125,947,000	115,171,200	562,100,900	
	Financing Sources							
4	Balance in Improvement and Extension Fund *(b)*	96,762,200	102,225,900	90,842,100	89,182,900	91,842,300	*96,762,200*	*(i)*
	Construction Bond Funds							
5	Beginning Balance *(b)*	99,814,100	45,653,900	49,568,300	49,778,800	49,728,300	*99,814,100*	*(i)*
	Bond Proceeds							
6	Sewer System Revenue Bonds *(c)*	257,465,000	45,000,000	54,000,000	85,000,000	47,000,000	488,465,000	
7	Less: Defeasance Requirements *(d)*	(212,092,500)	NA	NA	NA	NA	(212,092,500)	
8	Less: Transfer to DWSD Const. Fund *(e)*	(91,000,000)	0	0	0	0	(91,000,000)	
9	Less: Issuance Expenses *(f)*	45,627,500	(2,700,000)	(3,240,000)	(5,100,000)	(2,820,000)	31,767,500	
10	Net Bond Proceeds Available	0	42,300,000	50,760,000	79,900,000	44,180,000	217,140,000	
11	State Clean Water Revolving Fund Loans	42,197,000	30,923,000	10,904,000	0	0	84,024,000	
12	Less: Transfer to DWSD Constr. Fund	0	0	0	0	0	0	
13	Net State CWRF Financing for Authority	42,197,000	30,923,000	10,904,000	0	0	84,024,000	
14	Investment Income	513,800	109,400	187,500	97,500	279,200	1,187,400	
15	Subtotal - Construction Bond Funds	142,524,900	118,986,300	111,419,800	129,776,300	94,187,500	402,165,500	
16	**Total Financing Sources Available**	239,287,100	221,212,200	202,261,900	218,959,200	186,029,800	*498,927,700*	
	Application of Financing Sources							
17	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900	
18	I&E Funds - Specifically Designated I&E Proje	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000	
19	I&E Funding of Debt Eligible Projects	0	20,000,000	25,000,000	20,000,000	55,000,000	120,000,000	
20	Project Expenditures from Construction Funds	96,871,000	69,418,000	61,641,000	80,048,000	43,620,000	351,598,000	
21	**Total Financing Sources Applied**	111,140,000	105,110,900	104,731,800	125,947,000	115,171,200	562,100,900	
	Financing Sources Available for Future Requirements							
	Improvement & Extension Funds							
22	Remaining Beginning Balance *(g)*	82,493,200	66,533,000	47,751,300	43,283,900	20,291,100		
23	Transfers from Sewer Receiving Fund	19,732,700	24,309,100	41,431,600	48,558,400	68,499,200	202,531,000	
24	Total Improvement & Extension Fund	102,225,900	90,842,100	89,182,900	91,842,300	88,790,300	*88,790,300*	*(j)*
25	Construction Bond Funds *(h)*	45,653,900	49,568,300	49,778,800	49,728,300	50,567,500	*50,567,500*	*(j)*
26	**Financing Sources Available for Future Req'ts**	147,879,800	140,410,400	138,961,700	141,570,600	139,357,800	*139,357,800*	*(j)*

(a) From Table 2.
(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).
(c) Par value for the Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.
(d) Amounts required to defease the 2018 Refunded Bonds.
(e) Includes amounts from the Series 2018 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that no additional DWSD CIP financing will be required from additional future bonds during the study period.
(f) For 2019, includes net effect of a bond premium, release of accrued debt service reserve amounts, and other issuance expenses. For future years assumes amounts will be required from bond proceeds to fund debt service reserve fund.
(g) Line 4 minus Lines 17 through 19.
(h) Line 15 minus Line 20.
(i) Total column reflects estimated balance available June 30, 2018.
(j) Total column reflects estimated balance available June 30, 2023.

Lines 17 through 21 illustrate the projected application of financing sources to meet the Authority's CIP financing requirements. The strategic approach applies I&E Funds to finance budgeted capital outlay and certain specifically designated, short lived major capital improvements, as noted on Lines 17 and 18. In addition, a strategic application of I&E Funds is planned for a portion of the "debt eligible" projects in the CIP, as shown on Line 19. All other

CONTENTS

Section	Description	Area Chief	FP&A Liaison
A	Budget Cycle Timeline		
B	Overview		
C	**Area and Group Budget & Financial Plan**	**Area Chief**	**FP&A Liaison**
	Water Operations	Porter	Collins
	Energy, Research, and Innovation	Porter	Collins
	Facility Operations	Porter	Collins
	Fleet	Porter	Collins
	Field Services	Porter	Collins
	Systems Control	Porter	Collins
	Wastewater Operations	Mehram	Arbaugh
	Wastewater Pumping Stations	Porter	Collins
	Planning Services	Coffey	Arbaugh
	Chief Administrative & Compliance Officer	Wolfson	Hunsinger
	General Counsel	Brown	Hunsinger
	Information Technology	Small	Hunsinger
	Organizational Development	Conerway	Hunsinger
	Board of Directors	McCormick	Mancini
	Chief Executive Officer	McCormick	Mancini
	Security	Jones	Hunsinger
	Public Affairs	Zdrodowski	Hunsinger
	Financial Services	Bateson	Mancini

Financial Plan Calendar

FY 2020 and 2021 Biennial Budget & Five-Year Financial Planning Cycle

The Great Lakes Water Authority (GLWA) Financial Planning Cycle includes:

1. FY 2020 and 2021 Biennial Budget
2. FY 2020 through FY 2024 Five-Year Financial Plan
3. FY 2020 through FY 2024 Five-Year Capital Improvement Plan
4. FY 2020 Schedule of Revenues and Charges

The schedule below reflects planning for the comprehensive GLWA Financial Plan.

Date	**Activity**
Friday, September 14, 2018	Internal – Deadline for Cost Center Budget Request
Thursday, October 25, 2018	Customer Rollout Meeting #1 – Water & Sewer Capital Improvement Plan Update
Thursday, November 29, 2018	Customer Rollout Meeting #2 – Units of Service Update
Saturday, December 1, 2018	GLWA and DWSD (City) - Exchange shared services to be provided and related costs (Shared Services Agreement 5.4)
Friday, December 21, 2018	GLWA Audit Committee Meeting – Revenue Requirement Status Report
Tuesday, January 1, 2019	DWSD – Preliminary two-year budget forecast Including key assumptions and impact statement due to GLWA (Water and Sewer Services Agreement 5.3)
Friday, January 4, 2019	Special GLWA Audit Committee Meeting – Review of Proposed FY 2020 & FY 2021 Biennial Budget (Revenue Requirement) and Five-Year Financial Plan
Wednesday, January 9, 2019	GLWA Board Workshop – Review of Proposed FY 2020 and 2021 Biennial Budget (Revenue Requirement) and Five-Year Financial Plan
Thursday, January 10, 2019	Customer Rollout Meeting #3 – Proposed FY 2020 Revenue Requirement
Friday, January 18, 2019	GLWA Audit Committee Meeting – Regular Meeting
Wednesday, January 23, 2019	GLWA Board Meeting – Status Report FY 2020 Service Charges, FY 2020 and 2021 Biennial Budget (Revenue Requirement) and Five-Year Financial Plan

Thursday, January 24, 2019	Customer Rollout Meeting #4 – Proposed FY 2020 Service Charges
Friday, January 25, 2019	Publish notice of the hearing by publication in a newspaper of general circulation **(B)**
Friday, January 25, 2019	Mail Notice to Customers of Public Hearing to be held on February 27, 2019 (minimum 30 days prior to Act 279 Public Hearing) **(D)**
Friday, February 1, 2019	DWSD – Current capital improvement plan due to GLWA (Water and Sewer Services Agreement 5.3d(i))
Wednesday, February 27, 2019	**GLWA Board Meeting – Public Hearing FY 2020 & FY 2021 Biennial Budget (A)**
Wednesday, February 27, 2019	**GLWA Board Meeting – Public Hearing FY 2020 Schedule of Revenues and Charges (Act 279, minimum 120 days before effective date) (C)**
Wednesday, February 27, 2019	GLWA Board Meeting – Proposed Approval of the FY 2020 & FY 2021 Biennial Budget (A)
Wednesday, February 27, 2019	GLWA Board Meeting – Proposed Approval of FY 2020–2024 Capital Improvement Plan
Wednesday, February 27, 2019	GLWA Board Meeting – Public Hearing & Proposed Approval of FY 2020 Schedule of Revenues and Charges (Act 279, minimum 120 days before effective date) (C)
Thursday, February 28, 2019	Mail Notice to Customers of Approved Charges
Saturday, March 23, 2019	*DWSD* – Local system adopted biennial budget due to GLWA (Water and Sewer Services Agreement 5.3B)
Wednesday, May 1, 2019	*DWSD* – Local system provides direction to GLWA on how to apply lease payment (Water and Sewer Services Agreement 4.3)
Monday, July 1, 2019	GLWA – Effective date of FY 2020 and 2021 Biennial Budget, FY 2020 Schedule of Charges, and FY 2020-2024 Capital Improvement Plan

(A) thru (D) - The above schedule is designed to meet applicable statutory and contractual requirements with excerpts shown below.

A. **Uniform Budgeting and Accounting Act, Act 2 of 1968, Section 141.434**, "Before final passage of a general appropriations act by the legislative body, a public hearing shall be held as required by 1963 (2nd Ex Sess) PA 43, MCL 141.411 to 141.415, and the open meetings act, 1976 PA 267, MCL 15.261 to 15.275." (For purposes of Public Act 2, the GLWA Board is the legislative body.)

B. **Budget Hearings of Local Governments, Act 43 of 1963 (2nd Ex. Sess.), Section 141.412,** "The local unit shall give notice of the hearing by publication in a newspaper of general circulation within the local unit at least 6 days before the hearing." (For purposes of Public Act 2, the GLWA Board is a local unit.)

C. **Home Rule City Act, Act 279 of 1909, Section 117.5e**, "Municipal water or sewage system; annual audit; public hearing before proposed rate increase. A municipal water or sewage system established by a city incorporated under this act which serves more than 40% of the population of the state shall: ….(b) Hold at least 1 public hearing at least 120 days before a proposed rate increase is scheduled to take effect. Each hearing shall be conducted in compliance with Act No. 267 of the Public Acts of 1976, being sections 15.261 to 15.275 of the Michigan Compiled Laws. Notice of the time, date, and place of each hearing shall be given in the manner required by Act No. 267 of the Public Acts of 1976, shall be prominently printed in a daily newspaper of general circulation within the area, and shall be mailed to each city, village, or township served by the system not less than 30 days before each hearing. A final vote by the governing body of the city to implement a proposed rate increase shall not be taken until the hearings provided for in this subdivision are concluded and the results of those hearings are considered by the city's governing body." (Emphasis added)

   It should be noted that the Home Rule City Act does not apply to GLWA. It is relevant to GLWA's planning cycle, however, as it is referenced in the *Wholesale Customer Model Water Contract* as noted below.

D. **GLWA Wholesale Customer Model Water Contract Section 7.02** provides: "Notification of Rates. As soon as possible in the ratemaking process, the Board shall provide information on proposed rates and the draft data and information used in the calculation of proposed rates in a format that will enable Customer to assist in the ratemaking process. Not less than thirty calendar days prior to the hearing required by Act 279, the Board shall provide Customer with written notice of a proposed rate and the underlying data used to calculate the rate. The Board shall meet with Customer to review the rate and the data." (Emphasis added; Act 279 is the Home Rule City Act noted above.)

Great Lakes Water Authrority
Draft Operations & Maintenance Budget -
FY 2020 through FY 2024
As of 12.21.2018

Operations & Maintenance Expense	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 $ Increase/ (Decrease)	FY 2020 % Increase/ (Decrease)	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Water Operating & Field Services	**112,297,700**	**100,466,000**	**113,317,700**	**112,759,100**	**37,417,700**	**112,973,600**	**214,500**	**0.2%**	**114,479,400**	**116,088,300**	**117,775,300**	**119,139,300**
Chief Operating Officer - Water Operations	**399,700**	**332,100**	**477,900**	**477,900**	**100,800**	**359,600**	**(118,300)**	**-24.8%**	**362,100**	**364,400**	**366,900**	**368,600**
882001 - COO - Water Operations & Fiel	399,700	332,100	477,900	477,900	100,800	359,600	(118,300)	-24.8%	362,100	364,400	366,900	368,600
Energy, Research & Innovation	**612,800**	**613,300**	**1,463,900**	**1,463,900**	**550,500**	**2,040,000**	**576,100**	**39.4%**	**1,808,400**	**1,649,900**	**1,539,200**	**1,330,800**
882501 - Energy, Research & Innovation	612,800	613,300	1,463,900	1,463,900	550,500	2,040,000	576,100	39.4%	1,808,400	1,649,900	1,539,200	1,330,800
Facility and Fleet Operations	**9,882,900**	**9,859,900**	**10,163,400**	**10,163,400**	**2,350,000**	**10,572,700**	**409,300**	**4.0%**	**10,668,100**	**10,765,400**	**10,864,600**	**10,957,800**
882421 - Facility Operations	7,764,800	7,774,100	7,581,500	7,581,500	1,479,800	8,538,200	956,700	12.6%	8,593,300	8,649,500	8,707,100	8,766,600
882422 - Fleet Operations	2,118,100	2,085,800	2,581,900	2,581,900	870,200	2,034,500	(547,400)	-21.2%	2,074,800	2,115,900	2,157,500	2,191,200
Field Services	**16,599,300**	**16,571,000**	**20,796,400**	**20,237,800**	**8,822,700**	**20,493,100**	**255,300**	**1.3%**	**20,732,500**	**20,972,600**	**21,213,300**	**21,242,600**
882401 - Field Services Director	3,700,300	3,682,200	5,689,600	-	-	-	-	#DIV/0!	-	-	-	-
882411 - Field Engineering	900,500	899,100	1,472,100	-	-	-	-	#DIV/0!	-	-	-	-
882431 - Field Service Operations	11,998,500	11,989,700	13,634,700	20,237,800	8,822,700	20,493,100	255,300	1.3%	20,732,500	20,972,600	21,213,300	21,242,600
Water Director	**1,468,800**	**1,375,500**	**1,691,500**	**1,691,500**	**451,000**	**1,617,800**	**(73,700)**	**-4.4%**	**1,628,600**	**1,639,400**	**1,650,400**	**1,655,100**
882101 - Water Director	1,468,800	1,375,500	1,691,500	1,691,500	451,000	1,617,800	(73,700)	-4.4%	1,628,600	1,639,400	1,650,400	1,655,100
Water Engineering	**1,402,900**	**1,402,000**	**1,972,600**	**2,531,200**	**518,200**	**1,672,300**	**(858,900)**	**-33.9%**	**1,681,700**	**1,691,300**	**1,701,000**	**1,707,000**
882111 - Water Engineering	1,402,900	1,402,000	1,972,600	2,531,200	518,200	1,672,300	(858,900)	-33.9%	1,681,700	1,691,300	1,701,000	1,707,000
Water Quality	**1,392,500**	**1,239,500**	**1,797,500**	**1,797,500**	**388,500**	**1,856,600**	**59,100**	**3.3%**	**1,864,500**	**1,872,600**	**1,880,900**	**1,888,500**
882121 - Water Quality	1,392,500	1,239,500	1,797,500	1,797,500	388,500	1,856,600	59,100	3.3%	1,864,500	1,872,600	1,880,900	1,888,500
Water Operations	**56,886,600**	**47,631,600**	**48,739,500**	**48,739,500**	**17,412,600**	**50,135,500**	**1,396,000**	**2.9%**	**50,382,300**	**50,731,500**	**51,080,500**	**51,144,000**
882131 - Water Works Park	15,137,000	8,618,600	9,281,600	9,281,600	2,633,500	9,043,400	(238,200)	-2.6%	9,086,600	9,130,000	9,173,800	9,188,400
882141 - Springwells Water Plant	10,563,900	10,047,600	10,213,100	10,213,100	5,630,900	12,413,800	2,200,700	21.5%	12,572,400	12,731,600	12,890,800	12,904,000
882151 - Northeast Water Plant	10,336,400	9,400,300	9,926,500	9,926,500	3,447,000	9,576,600	(349,900)	-3.5%	9,644,700	9,713,600	9,782,200	9,794,200
882161 - Southwest Water Plant	8,790,300	8,022,500	6,681,700	6,681,700	2,037,600	6,975,500	293,800	4.4%	6,924,700	6,974,400	7,023,800	7,035,500
882171 - Lake Huron Water Plant	12,059,000	11,542,600	12,636,600	12,636,600	3,663,600	12,126,200	(510,400)	-4.0%	12,153,900	12,181,900	12,209,900	12,221,900
Systems Operations Control	**11,692,100**	**11,748,100**	**14,297,800**	**14,297,800**	**2,543,900**	**11,939,700**	**(2,358,100)**	**-16.5%**	**11,983,700**	**12,028,000**	**12,072,400**	**12,080,600**
882301 - Systems Operations Control	11,692,100	11,732,200	14,297,800	14,297,800	2,543,900	11,939,700	(2,358,100)	-16.5%	11,983,700	12,028,000	12,072,400	12,080,600
892301 - Systems Operations Control	-	15,900	-	-	-	-	-	#DIV/0!	-	-	-	-
Pumping Stations	**10,811,000**	**9,693,000**	**9,962,700**	**9,962,700**	**4,279,500**	**9,642,100**	**(320,600)**	**-3.2%**	**9,742,600**	**9,842,800**	**9,943,100**	**9,943,100**
882321 - Ford Rd Pumping Station	542,000	401,000	392,000	392,000	145,000	394,600	2,600	0.7%	402,300	409,900	417,600	417,600
882322 - Eastside Pumping Station	160,000	34,200	80,000	80,000	13,200	43,000	(37,000)	-46.3%	43,100	43,100	43,200	43,200
882323 - Northwest Pumping Station	36,000	8,300	37,000	37,000	4,800	17,000	(20,000)	-54.1%	17,000	17,000	17,000	17,000
882324 - West Service Center Pumping S	750,000	745,600	760,000	760,000	322,000	770,000	10,000	1.3%	785,000	800,000	815,000	815,000
882325 - Michigan Ave Pumping Station	129,900	83,500	119,000	119,000	29,300	100,800	(18,200)	-15.3%	102,800	104,600	106,600	106,600
882326 - West Chicago Rd Pumping Stat	105,000	50,500	75,000	75,000	10,700	61,000	(14,000)	-18.7%	62,000	63,000	64,000	64,000
882327 - Electric Ave Pumping Station	45,700	18,700	50,000	50,000	2,900	35,500	(14,500)	-29.0%	36,000	36,500	37,000	37,000
882328 - Orion Township Pumping Stati	180,000	71,200	100,000	100,000	22,800	81,500	(18,500)	-18.5%	83,000	84,500	86,000	86,000
882329 - North Service Center Pumping	2,450,000	2,094,500	2,230,000	2,230,000	805,100	2,127,000	(103,000)	-4.6%	2,129,000	2,131,000	2,133,000	2,133,000
882330 - Adams Road Pumping Station	550,000	545,100	575,000	575,000	177,100	520,000	(55,000)	-9.6%	520,000	520,000	520,000	520,000
882331 - Newburgh Pumping Station	395,000	375,800	390,000	390,000	140,100	382,300	(7,700)	-2.0%	389,600	396,900	404,200	404,200
882332 - Franklin Road Pumping Station	850,000	845,100	855,000	855,000	344,100	830,600	(24,400)	-2.9%	831,200	831,800	832,400	832,400
882333 - Roseville Pumping Station	-	-	30,200	30,200	-	10,300	(19,900)	-65.9%	10,400	10,500	10,600	10,600
882334 - Wick Road Pumping Station	561,400	558,200	540,500	540,500	227,600	571,000	30,500	5.6%	581,500	592,000	602,500	602,500
882335 - Joy Road Pumping Station	605,500	592,400	630,500	630,500	288,000	592,300	(38,200)	-6.1%	592,700	593,100	593,400	593,400
882336 - Schoolcraft Pumping Station	405,000	408,900	456,000	456,000	145,700	451,300	(4,700)	-1.0%	451,600	452,000	452,300	452,300

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882337 - Ypsilanti Pumping Station	391,500	375,000	351,500	351,500	117,400	353,300	1,800	0.5%	360,200	367,000	373,800	373,800
882338 - Imlay Pumping Station	2,105,000	2,091,300	1,775,000	1,775,000	1,265,300	1,805,300	30,300	1.7%	1,840,600	1,875,900	1,911,200	1,911,200
882339 - Rochester Pumping Station	283,000	182,400	235,000	235,000	163,400	224,200	(10,800)	-4.6%	228,400	232,600	236,800	236,800
882340 - Haggerty Road Pumping Statio	266,000	211,300	281,000	281,000	55,000	271,100	(9,900)	-3.5%	276,200	281,400	286,500	286,500
Water System Operations Unallocated	**1,149,100**	**-**	**1,954,500**	**1,395,900**	**-**	**2,644,200**	**1,248,300**	**89.4%**	**3,624,900**	**4,530,400**	**5,463,000**	**6,821,200**
887601 - Water System Operations Unal	1,149,100	-	1,954,500	1,395,900	-	2,644,200	1,248,300	89.4%	3,624,900	4,530,400	5,463,000	6,821,200
Wastewater Operating Services	**129,306,100**	**115,134,800**	**118,318,900**	**118,318,900**	**36,831,600**	**120,685,300**	**2,366,400**	**2.0%**	**123,099,000**	**125,561,100**	**128,072,400**	**130,633,800**
Chief Operating Officer - Wastewater Oper	**1,700**	**400**	**1,688,300**	**1,688,300**	**457,000**	**2,511,100**	**822,800**	**48.7%**	**2,538,200**	**2,566,600**	**2,594,700**	**2,723,200**
892001 - Chief Operating Officer Wastev	1,700	400	1,688,300	1,688,300	457,000	2,511,100	822,800	48.7%	2,538,200	2,566,600	2,594,700	2,723,200
Chief Operating Officer - Wastewater	1,700	400	1,688,300	1,688,300	457,000	2,511,100	822,800	48.7%	2,538,200	2,566,600	2,594,700	2,723,200
Legal Settlement & Claims - Operating	**5,200,000**	**5,103,900**	**-**	**-**	**-**	**-**	**-**	**#DIV/0!**	**-**	**-**	**-**	**-**
896901 - Legal Settlement & Claims - Op	5,200,000	5,103,900	-	-	-	-	-	#DIV/0!	-	-	-	-
Wastewater Director	**2,611,400**	**2,384,200**	**4,359,500**	**4,359,500**	**1,146,800**	**5,242,300**	**882,800**	**20.3%**	**5,422,600**	**5,039,900**	**4,887,000**	**4,719,500**
892201 - Wastewater Director	2,611,400	2,384,200	4,359,500	4,359,500	1,146,800	5,242,300	882,800	20.3%	5,422,600	5,039,900	4,887,000	4,719,500
Wastewater Engineering	**3,014,300**	**2,537,900**	**2,572,700**	**2,572,700**	**937,100**	**2,262,000**	**(310,700)**	**-12.1%**	**1,965,300**	**2,004,300**	**2,227,700**	**1,965,800**
892211 - Wastewater Engineering	3,014,300	2,537,900	2,572,700	2,572,700	937,100	2,262,000	(310,700)	-12.1%	1,965,300	2,004,300	2,227,700	1,965,800
Wastewater Operations	**97,867,700**	**88,686,300**	**83,277,000**	**83,277,000**	**27,454,800**	**85,336,800**	**2,059,800**	**2.5%**	**87,155,300**	**88,742,500**	**89,894,100**	**91,831,300**
892221 - Wastewater Operations	63,964,900	56,206,700	28,161,300	28,161,300	10,878,000	29,151,900	990,600	3.5%	30,742,300	31,676,700	32,239,200	32,807,800
892222 - Wastewater Process Control	1,684,900	1,081,200	4,526,800	4,526,800	1,229,800	4,944,700	417,900	9.2%	4,507,200	4,835,100	4,824,500	5,388,200
892223 - Wastewater Primary Process	2,845,400	2,615,700	6,594,800	6,594,800	2,401,400	7,463,600	868,800	13.2%	7,480,000	7,437,300	7,522,600	7,613,700
892224 - Wastewater Secondary Process	6,219,600	6,198,500	11,567,100	11,567,100	3,220,600	11,099,900	(467,200)	-4.0%	11,107,000	11,155,800	11,264,800	11,573,200
892225 - Wastewater Dewatering Proce	2,248,300	1,990,000	6,095,900	6,095,900	1,601,900	5,636,700	(459,200)	-7.5%	5,851,200	5,971,700	6,026,800	6,106,400
892226 - Wastewater Incineration Proce	2,108,100	1,812,100	5,675,400	5,675,400	1,441,700	5,274,000	(401,400)	-7.1%	5,190,500	5,157,700	5,172,800	5,233,800
892227 - BDF, COF & Hauling	18,796,500	18,782,100	20,655,700	20,655,700	6,681,400	21,766,000	1,110,300	5.4%	22,277,100	22,508,200	22,843,400	23,108,200
Wastewater Laboratories	**927,700**	**884,300**	**3,761,200**	**3,761,200**	**1,402,600**	**4,148,900**	**387,700**	**10.3%**	**3,812,000**	**3,847,400**	**3,867,300**	**3,897,000**
892235 - Wastewater Laboratories	927,700	884,300	3,761,200	3,761,200	1,402,600	4,148,900	387,700	10.3%	3,812,000	3,847,400	3,867,300	3,897,000
Industrial Waste Control	**5,429,100**	**5,162,600**	**2,792,300**	**2,792,300**	**835,800**	**2,407,100**	**(385,200)**	**-13.8%**	**2,443,700**	**2,446,400**	**2,388,700**	**2,360,500**
892231 - Industrial Waste Control	5,429,100	5,162,600	2,792,300	2,792,300	835,800	2,407,100	(385,200)	-13.8%	2,443,700	2,446,400	2,388,700	2,360,500
Wastewater System Operations Unallocate	**1,161,500**	**-**	**2,440,500**	**2,440,500**	**-**	**3,264,900**	**824,400**	**33.8%**	**3,976,300**	**7,050,800**	**7,636,600**	**8,696,600**
897600 - Wastewater System Operation	1,161,500	-	2,440,500	2,440,500	-	3,264,900	824,400	33.8%	3,976,300	7,050,800	7,636,600	8,696,600
Wastewater System Operations Unal	1,161,500	-	2,440,500	2,440,500	-	3,264,900	824,400	33.8%	3,976,300	7,050,800	7,636,600	8,696,600
Combined Sewer Overflow Facilities	**9,942,000**	**7,744,300**	**14,094,200**	**14,094,200**	**3,604,300**	**12,585,600**	**(1,508,600)**	**-10.7%**	**12,826,500**	**10,871,500**	**11,552,100**	**11,415,700**
892270 - Combined Sewer Overflow	3,017,400	2,396,700	5,798,300	5,798,300	1,131,300	5,846,900	48,600	0.8%	6,130,800	6,419,400	6,793,500	6,818,200
892271 - Puritan Fenkell Combined Sew	317,700	242,900	227,100	227,100	103,300	293,000	65,900	29.0%	287,400	294,600	302,200	309,500
892272 - 7 Mile Combined Sewer Overfl	230,400	154,000	176,000	176,000	71,500	130,300	(45,700)	-26.0%	131,600	133,600	136,500	138,100
892273 - Hubble Southfield CSO	637,800	572,800	464,800	464,800	166,800	472,400	7,600	1.6%	475,200	479,300	487,500	490,300
892274 - Leib Combined Sewer Overflow	400,100	230,400	258,700	258,700	140,200	145,800	(112,900)	-43.6%	148,300	151,600	154,700	158,300
892275 - St Aubin Combined Sewer Ove	316,200	232,200	294,700	294,700	103,400	165,900	(128,800)	-43.7%	148,400	151,100	156,800	152,400
892276 - Connor Creek Combined Sewe	1,529,600	1,483,700	1,540,200	1,540,200	406,800	1,250,100	(290,100)	-18.8%	1,255,000	1,261,600	1,294,100	1,299,600
892277 - Baby Creek Combined Sewer C	1,920,900	1,067,400	3,482,100	3,482,100	1,033,200	2,974,900	(507,200)	-14.6%	2,905,900	677,000	708,200	728,100
892278 - Oakwood Combined Sewer Ov	1,492,700	1,364,400	1,714,700	1,714,700	410,400	1,306,300	(408,400)	-23.8%	1,343,800	1,303,100	1,518,600	1,321,200
892279 - Belle Isle Combined Sewer Ove	79,200	(200)	137,600	137,600	37,400	-	(137,600)	-100.0%	100	200	-	-
Wastewater Fire Damage	**-**	**-**	**-**	**-**	**35,100**	**-**	**-**	**#DIV/0!**	**-**	**-**	**-**	**-**
892228 - Wastewater Fire Damage	-	-	-	-	35,100	-	-	#DIV/0!	-	-	-	-

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Wastewater Fire Damage	-	-	-	-	35,100	-	-	#DIV/0!	-	-	-	-
Pumping Stations	**3,150,700**	**2,630,900**	**3,333,200**	**3,333,200**	**958,100**	**2,926,600**	**(406,600)**	**-12.2%**	**2,959,100**	**2,991,700**	**3,024,200**	**3,024,200**
892342 - Belle Isle Pumping Station	44,200	-	80,000	80,000	19,200	-	(80,000)	-100.0%	-	-	-	-
892343 - Blue Hill Pumping Station	8,500	-	80,000	80,000	11,000	-	(80,000)	-100.0%	-	-	-	-
892345 - Conner Pumping Station	887,000	831,900	897,000	897,000	279,500	899,400	2,400	0.3%	916,900	934,300	951,800	951,800
892346 - Fairview Pumping Station	685,000	616,100	571,000	571,000	125,700	680,200	109,200	19.1%	690,400	700,600	710,800	710,800
892347 - Fischer Pumping Station	(6,000)	-	40,000	40,000	3,500	-	(40,000)	-100.0%	-	-	-	-
892348 - Fox Creek Pumping Station	15,000	1,500	18,200	18,200	400	18,500	300	1.6%	18,900	19,300	19,700	19,700
892349 - Freud Pumping Station	295,000	223,300	356,000	356,000	85,300	281,600	(74,400)	-20.9%	282,200	282,900	283,500	283,500
892350 - Northeast Pumping Station	1,036,000	792,200	1,018,000	1,018,000	323,700	850,000	(168,000)	-16.5%	850,000	850,000	850,000	850,000
892351 - Oakwood Pumping Station	193,000	165,900	193,000	193,000	51,900	196,900	3,900	2.0%	200,700	204,600	208,400	208,400
892352 - Woodmere Pumping Station	(7,000)	-	80,000	80,000	57,900	-	(80,000)	-100.0%	-	-	-	-
Planning Services	**14,416,700**	**13,588,400**	**15,514,400**	**15,514,400**	**4,708,500**	**19,161,500**	**3,647,100**	**23.5%**	**18,420,100**	**22,432,200**	**24,078,100**	**25,566,200**
Capital Improvement Planning	**-**	**-**	**693,000**	**693,000**	**1,500**	**1,943,900**	**1,250,900**	**180.5%**	**2,171,700**	**1,742,200**	**2,640,200**	**2,680,000**
886601 - Capital Improvement Planning	-	-	693,000	693,000	1,500	1,943,900	1,250,900	180.5%	2,171,700	1,742,200	2,640,200	2,680,000
Chief Planning Officer	**886,600**	**886,700**	**390,600**	**390,600**	**164,900**	**408,900**	**18,300**	**4.7%**	**525,000**	**523,100**	**527,000**	**527,700**
886001 - Chief Planning Officer	886,600	886,700	390,600	390,600	164,900	408,900	18,300	4.7%	525,000	523,100	527,000	527,700
Planning Services	**1,907,700**	**1,907,400**	**2,534,800**	**2,534,800**	**826,700**	**4,990,100**	**2,455,300**	**96.9%**	**4,766,000**	**8,397,500**	**9,915,700**	**11,133,400**
886201 - Asset Management	1,711,300	1,711,200	2,534,800	2,534,800	826,700	4,990,100	2,455,300	96.9%	4,766,000	8,397,500	9,915,700	11,133,400
886301 - Energy Management	196,400	196,200	-	-	-	-	-	#DIV/0!	-	-	-	-
886501 - Research Innovation	-	-	-	-	-	-	-	#DIV/0!	-	-	-	-
896201 - Asset Mgt & Capital Improvem	-	-	-	-	-	-	-	#DIV/0!	-	-	-	-
System Analytics	**-**	**10,300**	**-**	**-**	**-**	**-**	**-**	**#DIV/0!**	**-**	**-**	**-**	**-**
896401 - System Analytics	-	10,300	-	-	-	-	-	#DIV/0!	-	-	-	-
Systems Analytics	**7,335,800**	**6,497,400**	**7,501,800**	**7,501,800**	**1,946,100**	**9,385,500**	**1,883,700**	**25.1%**	**8,299,200**	**8,914,300**	**8,535,800**	**8,647,300**
886401 - Systems Analytics	7,335,800	6,497,400	7,501,800	7,501,800	1,946,100	9,385,500	1,883,700	25.1%	8,299,200	8,914,300	8,535,800	8,647,300
Systems Planning	**4,286,600**	**4,286,600**	**4,394,200**	**4,394,200**	**1,769,300**	**2,433,100**	**(1,961,100)**	**-44.6%**	**2,658,200**	**2,855,100**	**2,459,400**	**2,577,800**
886101 - Systems Planning	4,286,600	4,286,600	4,394,200	4,394,200	1,769,300	2,433,100	(1,961,100)	-44.6%	2,658,200	2,855,100	2,459,400	2,577,800
Administrative & Compliance Services	**36,588,600**	**36,437,300**	**41,654,800**	**41,654,800**	**11,094,800**	**48,827,300**	**7,172,500**	**17.2%**	**51,519,600**	**52,663,700**	**51,853,300**	**52,999,600**
Chief Administrative Officer	**561,400**	**561,400**	**880,700**	**1,105,200**	**231,300**	**936,600**	**(168,600)**	**-15.3%**	**944,400**	**952,300**	**960,400**	**975,300**
883001 - Chief Administrative Officer	561,400	561,400	880,700	1,105,200	231,300	936,600	(168,600)	-15.3%	944,400	952,300	960,400	975,300
General Counsel	**4,760,600**	**4,761,000**	**2,994,000**	**2,769,500**	**793,300**	**3,038,900**	**269,400**	**9.7%**	**3,084,500**	**3,131,000**	**3,178,300**	**3,276,900**
883101 - General Counsel	4,760,600	4,761,000	2,994,000	2,769,500	793,300	3,038,900	269,400	9.7%	3,084,500	3,131,000	3,178,300	3,276,900
Information Technology	**24,473,600**	**24,322,400**	**30,507,800**	**30,507,800**	**7,892,300**	**36,254,300**	**5,746,500**	**18.8%**	**38,630,400**	**39,640,600**	**38,689,600**	**39,587,400**
883301 - Office of the CIO	437,900	437,700	(236,500)	(236,500)	168,700	975,800	1,212,300	-512.6%	592,500	596,400	600,300	604,100
883311 - InfoTechnology Project Manag	1,102,600	1,102,400	(671,400)	(671,400)	317,400	1,622,600	2,294,000	-341.7%	1,634,700	1,647,200	1,659,700	1,672,400
883321 - Info Technology Service Delive	2,136,300	2,136,300	3,371,900	3,371,900	573,800	3,807,700	435,800	12.9%	3,854,200	3,898,500	3,830,200	3,888,200
883331 - Info Technology Infrastructure	14,352,300	14,264,300	18,357,800	18,357,800	5,566,400	19,432,400	1,074,600	5.9%	21,640,600	22,431,100	22,375,700	23,318,800
883341 - Info Technology Enterprise Apr	1,075,400	1,074,900	3,193,200	3,193,200	367,900	4,098,700	905,500	28.4%	4,063,700	4,211,100	4,251,900	4,222,600
883351 - Info Technology Business Appli	5,043,100	4,980,200	6,001,100	6,001,100	1,360,400	5,913,900	(87,200)	-1.5%	6,408,200	6,417,700	5,531,100	5,438,400
883361 - Info Technology Security & Risl	326,000	326,600	491,700	491,700	(462,300)	403,200	(88,500)	-18.0%	436,500	438,600	440,700	442,900
893301 - Information Technology	-	-	-	-	-	-	-	#DIV/0!	-	-	-	-
Organizational Development	**2,615,300**	**2,615,300**	**3,132,900**	**3,132,900**	**898,900**	**4,366,400**	**1,233,500**	**39.4%**	**4,402,400**	**4,428,200**	**4,459,700**	**4,540,100**
883201 - Organizational Development	2,615,300	2,615,300	3,132,900	3,132,900	898,900	4,366,400	1,233,500	39.4%	4,402,400	4,428,200	4,459,700	4,540,100

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Risk Management and Safety	**4,177,700**	**4,177,200**	**4,139,400**	**4,139,400**	**1,279,000**	**4,231,100**	**91,700**	**2.2%**	**4,457,900**	**4,511,600**	**4,565,300**	**4,619,900**
883401 - Enterprise Risk Management a	1,552,700	1,552,800	1,775,400	1,775,400	330,500	1,819,800	44,400	2.5%	1,998,400	2,002,900	2,006,400	2,009,800
883411 - Enterprise Risk Mgt. Insurance	2,625,000	2,624,400	2,364,000	2,364,000	948,500	2,411,300	47,300	2.0%	2,459,500	2,508,700	2,558,900	2,610,100
Chief Executive Officer	**6,610,300**	**6,620,000**	**7,976,500**	**7,976,500**	**2,603,500**	**8,020,300**	**43,800**	**0.5%**	**8,172,500**	**8,083,600**	**8,138,000**	**8,158,900**
Board of Directors	**129,000**	**129,100**	**198,500**	**198,500**	**34,700**	**202,400**	**3,900**	**2.0%**	**206,500**	**210,600**	**214,800**	**219,100**
881151 - Board of Directors	129,000	129,100	198,500	198,500	34,700	202,400	3,900	2.0%	206,500	210,600	214,800	219,100
Chief Executive Officer	**501,000**	**501,100**	**616,500**	**616,500**	**176,600**	**632,700**	**16,200**	**2.6%**	**639,300**	**646,600**	**653,100**	**659,900**
881001 - Chief Executive Officer	501,000	501,100	616,500	616,500	176,600	632,700	16,200	2.6%	639,300	646,600	653,100	659,900
891001 - Chief Executive Officer	-	-	-	-	-	-	-	#DIV/0!	-	-	-	-
Chief Security & Integrity Officer	**4,951,400**	**4,961,100**	**5,900,000**	**5,900,000**	**2,050,800**	**5,799,100**	**(100,900)**	**-1.7%**	**5,912,000**	**5,833,500**	**5,861,000**	**5,872,600**
881201 - Security and Integrity	4,548,600	4,551,000	4,552,800	4,552,800	1,479,800	4,253,600	(299,200)	-6.6%	4,289,700	4,276,300	4,299,100	4,322,800
881202 - HazMat	402,800	402,700	1,347,200	1,347,200	571,000	1,545,500	198,300	14.7%	1,622,300	1,557,200	1,561,900	1,549,800
891202 - HazMat	-	7,400	-	-	-	-	-	#DIV/0!	-	-	-	-
Public Affairs	**1,028,900**	**1,028,700**	**1,261,500**	**1,261,500**	**341,400**	**1,386,100**	**124,600**	**9.9%**	**1,414,700**	**1,392,900**	**1,409,100**	**1,407,300**

Highlights

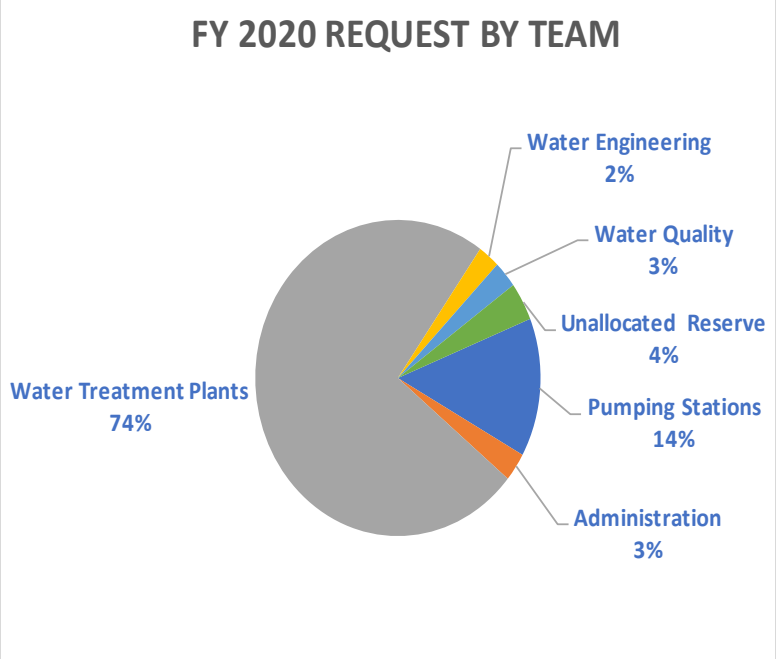
The Water Operations Area presently is leading GLWA in several strategic initiatives.

- **Maintain 100% water quality compliance**
  Delivery of pure, safe drinking water is an essential part of the GLWA's mission
- **Restructuring Water Production**
  Continue implementation of 2015 Water Master Plan Update
- **Improve Capital Project Delivery**
  Initiate Water Main Condition Assessment Program to provide reliable water service
- **Transmission Assessment & Rehabilitation**
  Complete the designs and begin construction of water mains
- **Improve Operational Reliability through Automation and Equipment Maintenance**
  Plan implementation of water automation
  Support asset management to improve maintenance activities

Organization

The GLWA Water Operations Area consists of four teams that contribute to producing and delivering water of unquestionable quality to nearly 40% of the State of Michigan's population while meeting or exceeding all state, federal, local, and department standards for quality and safety.

- **Administration**
  - Chief Operating Officer – Water Operations and Field Services
  - Water Director
  - Overall budget management including unallocated reserve
- **Water Engineering**
- **Water Quality**
- **Water Treatment Plants**
  - Water Works Park
  - Springwells WTP
  - Northeast WTP
  - Southwest WTP
  - Lake Huron WTP
- **Pumping Stations (water only)**
  - twenty (20) water booster stations (including Roseville Pump Station) throughout the regional service area

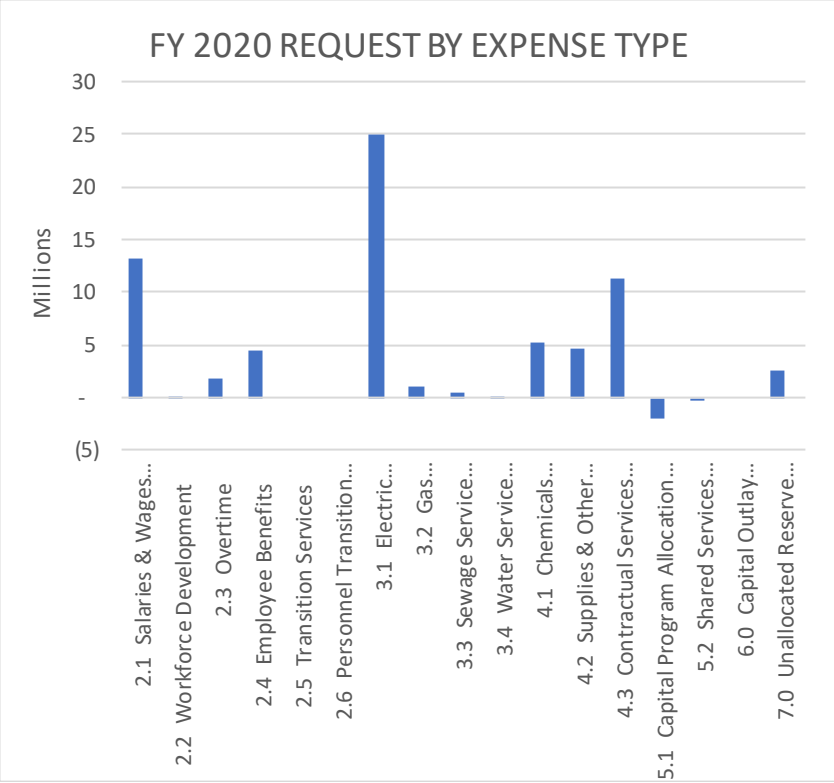


Expense Categories

There are three major categories of Water Operations expenses in the Operations and Maintenance Budget as listed below.

- Utilities - Electric
- Personnel Costs
- Contractual Services

The Utilities – Electric is the highest expense category for Water Operations. Increased water demand leads to increased energy consumption in order to transport enough safe drinking water to the GLWA's communities. Energy consumption is dependent on flow rate, total pressure, climate (more intense rainfall), and overall pump efficiency.



The Water Operations Area is required to obtain a consistent level of personnel in order to avoid staff fatigue, overtime cost incurred and to assure the highest level of water quality. Accordingly, personnel is the second highest expense category.

Contractual Services is the third highest expense category for Water Operations. The level of contractual services reflects the decision to contract for services such as HVAC maintenance, janitorial services, ovation support, alum sludge hauling and corrosion control optimization studies.

Biennial Budget Request

The biennial budget reflects an overall increase in FY 2020 as a result of the ramp up of alum sludge hauling contractual services for the 5 water treatment plants.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 17,797,700	$ 17,554,200	$ 19,125,600	$ 19,477,100	$ 890,800	4.8%	$ 19,565,400
3.1 Electric	26,566,200	25,439,600	26,232,000	25,068,500	(1,163,500)	-4.4%	25,252,000
3.2 Gas	1,245,300	937,000	1,132,600	1,060,100	(72,500)	-6.4%	1,068,800
3.3 Sewage Service	719,700	423,600	710,000	527,000	(183,000)	-25.8%	531,200
3.4 Water Service	59,900	900	60,200	23,300	(36,900)	-61.3%	23,500
4.1 Chemicals	5,198,300	4,804,700	5,674,100	5,174,700	(499,400)	-8.8%	5,222,300
4.2 Supplies & Other	5,577,400	4,053,100	5,271,900	4,739,900	(490,000)	-9.4%	4,768,200
4.3 Contractual Services	9,696,500	9,168,600	7,926,200	11,290,200	3,364,000	42.4%	11,320,700
5.1 Capital Program Allocation	(759,600)	(582,700)	(782,300)	(1,983,900)	(1,224,300)	161.2%	(1,995,400)
5.2 Shared Services	(150,000)	(141,100)	(150,000)	(93,000)	57,000	-38.0%	(94,900)
6.0 Capital Outlay	6,410,100	15,800	-	-	-	N/A	-
7.0 Unallocated Reserve	1,149,100	-	1,395,900	2,644,200	689,700	35.3%	3,624,900
Grand Total	$ 73,510,600	$ 61,673,700	$ 66,596,200	$ 67,928,100	$ 1,331,900	2.0%	$ 69,286,700

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Pumping Stations	$ 10,811,000	$ 9,693,000	$ 9,962,700	$ 9,642,100	$ (320,600)	-3.2%	$ 9,742,600
Administration	1,868,500	1,707,600	2,169,400	1,977,400	(192,000)	-8.9%	1,990,700
Water Treatment Plants	56,886,600	47,631,600	48,739,500	50,135,500	1,396,000	2.9%	50,382,300
Water Engineering	1,402,900	1,402,000	2,531,200	1,672,300	(300,300)	-15.2%	1,681,700
Water Quality	1,392,500	1,239,500	1,797,500	1,856,600	59,100	3.3%	1,864,500
Water System Operations Unallocated	1,149,100	-	1,395,900	2,644,200	689,700	35.3%	3,624,900
Grand Total	$ 73,510,600	$ 61,673,700	$ 66,596,200	$ 67,928,100	$ 1,331,900	2.0%	$ 69,286,700

Personnel Budget

Water system operations personnel consists of 224 positions and is largely comprised of staffing at the five water treatment plants at 163 positions for FY 2020. Water Quality, at 26 positions, and Water Engineering, at 24 positions, are the second and third largest categories for FY 2020.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Water System Operations	**209.00**	**224.00**	**224.00**	**224.00**	**224.00**	**224.00**	**224.00**
Chief Operating Officer - Water Operations & Field Services	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Water Director	7.00	9.00	9.00	9.00	9.00	9.00	9.00
Water Engineering	19.00	24.00	24.00	24.00	24.00	24.00	24.00
Water Quality	18.00	26.00	26.00	26.00	26.00	26.00	26.00
Subtotal Water Treatment Plants	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**
Water Works Park	36.00	37.00	37.00	37.00	37.00	37.00	37.00
Springwells Water Plant	35.00	35.00	36.00	36.00	36.00	36.00	36.00
Northeast Water Plant	32.00	32.00	30.00	30.00	30.00	30.00	30.00
Southwest Water Plant	29.00	29.00	30.00	30.00	30.00	30.00	30.00
Lake Huron Water Plant	31.00	30.00	30.00	30.00	30.00	30.00	30.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Water System Operations	**209.00**	**224.00**	**224.00**	**224.00**	**224.00**	**224.00**	**224.00**
Chief Operating Officer - Water Operations & Field Services	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Water Director	7.00	9.00	9.00	9.00	9.00	9.00	9.00
Water Engineering	19.00	24.00	24.00	24.00	24.00	24.00	24.00
Water Quality	18.00	26.00	26.00	26.00	26.00	26.00	26.00
Subtotal Water Treatment Plants	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**	**163.00**
Water Works Park	36.00	37.00	37.00	37.00	37.00	37.00	37.00
Springwells Water Plant	35.00	35.00	36.00	36.00	36.00	36.00	36.00
Northeast Water Plant	32.00	32.00	30.00	30.00	30.00	30.00	30.00
Southwest Water Plant	29.00	29.00	30.00	30.00	30.00	30.00	30.00
Lake Huron Water Plant	31.00	30.00	30.00	30.00	30.00	30.00	30.00

Personnel Budget - The table below presents the Water Operations personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

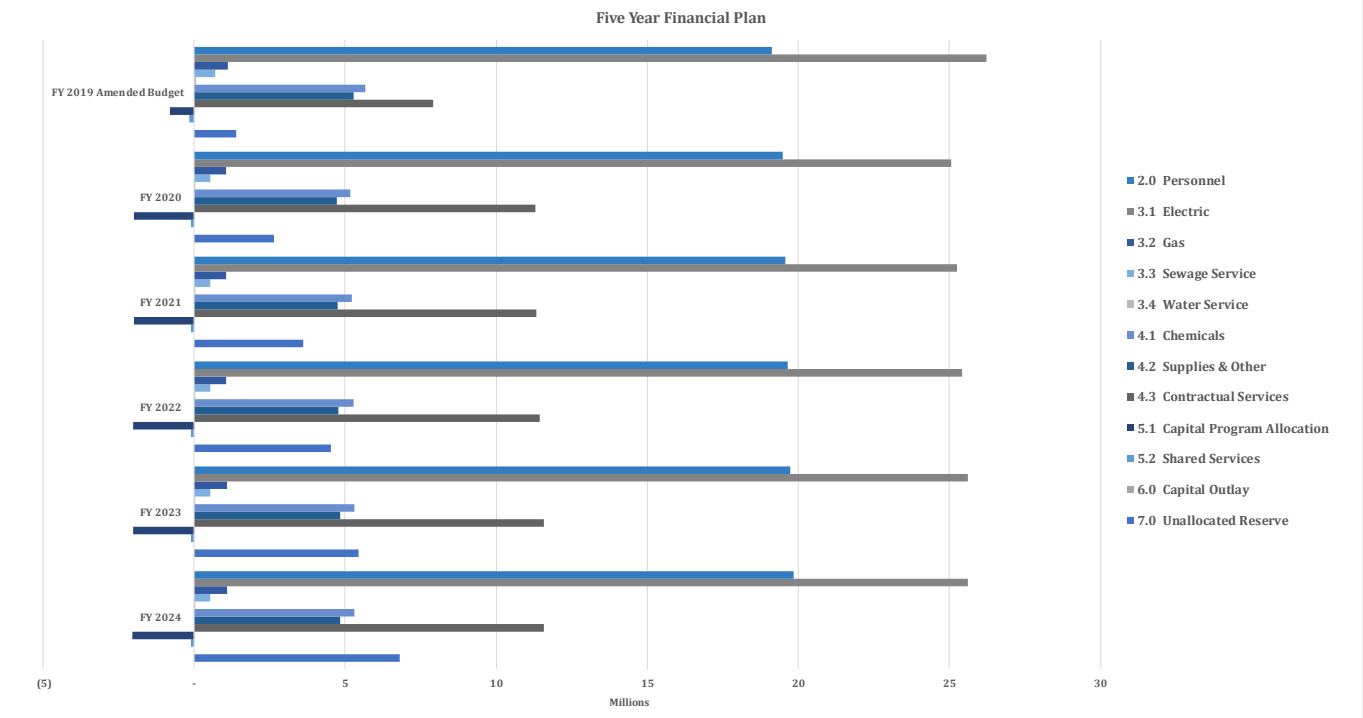
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved Budget	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Water System Operations	**$ 18,343,400**	**$ 19,125,600**	**$ 19,477,100**	**$ 19,565,400**	**$ 19,655,400**	**$ 19,747,100**	**$ 19,840,700**
Chief Operating Officer - Water Operations & Field Services	305,600	391,400	294,800	296,000	297,200	298,500	299,800
Water Director	776,800	969,300	1,005,200	1,009,700	1,014,200	1,018,900	1,023,600
Water Engineering	1,506,200	2,236,400	2,807,700	2,819,700	2,832,000	2,844,500	2,857,300
Water Quality	1,319,100	1,717,200	1,722,600	1,731,600	1,740,800	1,750,200	1,759,800
Subtotal Water Treatment Plants	**14,435,700**	**13,811,300**	**13,646,800**	**13,708,400**	**13,771,200**	**13,835,000**	**13,900,200**
Water Works Park	3,232,400	3,198,200	3,142,900	3,156,700	3,170,800	3,185,200	3,199,800
Springwells Water Plant	3,018,600	2,912,300	2,915,600	2,929,100	2,942,800	2,956,800	2,971,100
Northeast Water Plant	2,833,700	2,623,200	2,552,000	2,563,600	2,575,500	2,587,500	2,599,800
Southwest Water Plant	2,666,700	2,461,100	2,453,800	2,465,100	2,476,700	2,488,400	2,500,400
Lake Huron Water Plant	2,684,300	2,616,500	2,582,500	2,593,900	2,605,400	2,617,100	2,629,100

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 19,125,600	$ 19,477,100	$ 890,800	4.8%	$ 19,565,400	$ 19,655,400	$ 19,747,100	$ 19,840,700
3.1 Electric	26,232,000	25,068,500	(1,163,500)	-4.4%	25,252,000	25,435,500	25,619,000	25,619,000
3.2 Gas	1,132,600	1,060,100	(72,500)	-6.4%	1,068,800	1,077,500	1,086,100	1,086,100
3.3 Sewage Service	710,000	527,000	(183,000)	-25.8%	531,200	535,400	539,600	539,600
3.4 Water Service	60,200	23,300	(36,900)	-61.3%	23,500	23,600	23,800	23,800
4.1 Chemicals	5,674,100	5,174,700	(499,400)	-8.8%	5,222,300	5,270,000	5,317,700	5,317,700
4.2 Supplies & Other	5,271,900	4,739,900	(490,000)	-9.4%	4,768,200	4,797,100	4,825,200	4,825,200
4.3 Contractual Services	7,926,200	11,290,200	3,364,000	42.4%	11,320,700	11,451,700	11,582,300	11,581,600
5.1 Capital Program Allocation	(782,300)	(1,983,900)	(1,224,300)	161.2%	(1,995,400)	(2,007,400)	(2,019,300)	(2,026,700)
5.2 Shared Services	(150,000)	(93,000)	57,000	-38.0%	(94,900)	(96,800)	(98,700)	(100,700)
6.0 Capital Outlay	-	-	-	N/A	-	-	-	-
7.0 Unallocated Reserve	1,395,900	2,644,200	689,700	35.3%	3,624,900	4,530,400	5,463,000	6,821,200
Grand Total	$ 66,596,200	$ 67,928,100	$ 1,331,900	2.0%	$ 69,286,700	$ 70,672,400	$ 72,085,800	$ 73,527,500



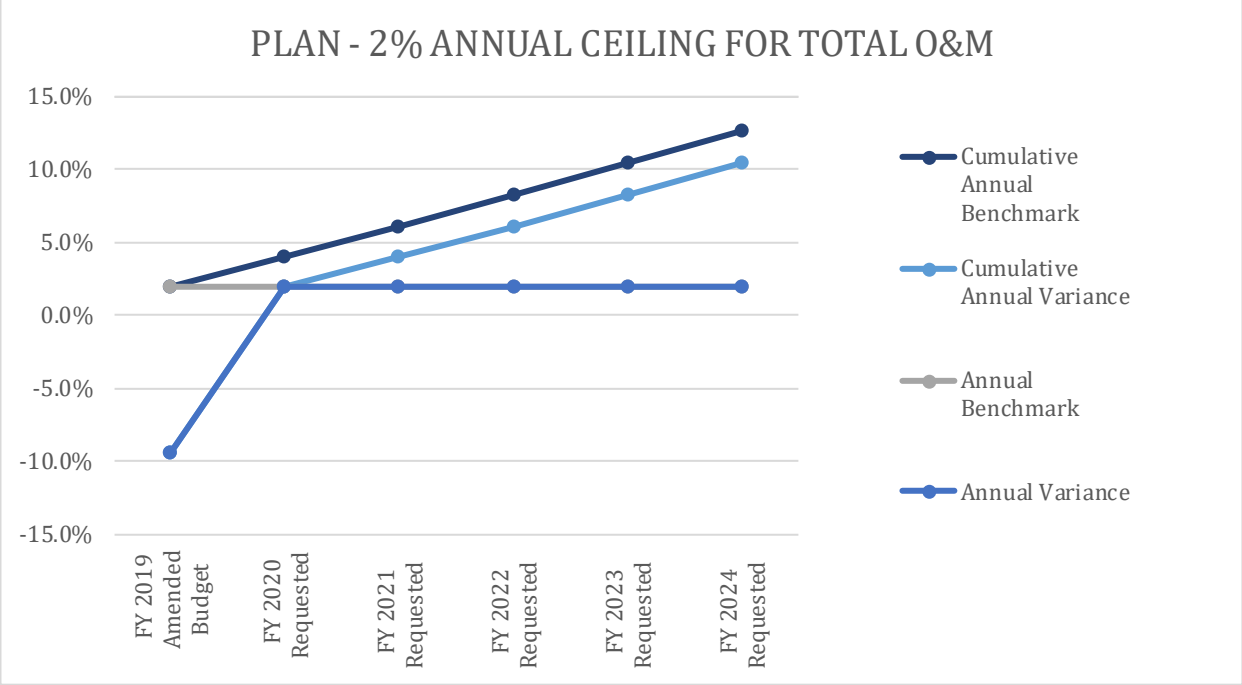
Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Pumping Stations	$ 9,962,700	$ 9,642,100	$ (320,600)	-3.2%	$ 9,742,600	$ 9,842,800	$ 9,943,100	$ 9,943,100
Administration	2,169,400	1,977,400	(192,000)	-8.9%	1,990,700	2,003,800	2,017,300	2,023,700
Water Treatment Plants	48,739,500	50,135,500	1,396,000	2.9%	50,382,300	50,731,500	51,080,500	51,144,000
Water Engineering	2,531,200	1,672,300	(300,300)	-15.2%	1,681,700	1,691,300	1,701,000	1,707,000
Water Quality	1,797,500	1,856,600	59,100	3.3%	1,864,500	1,872,600	1,880,900	1,888,500
Water System Operations Unallocated	1,395,900	2,644,200	689,700	35.3%	3,624,900	4,530,400	5,463,000	6,821,200
Grand Total	$ 66,596,200	$ 67,928,100	$ 1,331,900	2.0%	$ 69,286,700	$ 70,672,400	$ 72,085,800	$ 73,527,500

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Water Operations Group's financial plan reflects a Five Year Overall decrease of 10.4% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This increase is not unexpected given the consistency of these major initiatives. And while there is an increased expense in the short-term, it is believed that this is the result of stabilizing the staffing level and realigning the expenses to reflect existing contracts and upcoming projects. The stabilization and realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

"Open for 1.2019 Revised Draft"

Capital Outlay

Water Operations capital outlay is funded by the Improvement & Extension (I&E) budget.

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Water Engineering	**$ 5,500**	**$ 11,500**	**$ 5,500**	**$ 5,500**	**$ 5,500**
Drawing Cabinets and Shelves 5	-	6,000	-	-	-
Innovyse Infowater Maintenance Subscription	5,500	5,500	5,500	5,500	5,500
Water Quality	**7,000**	**32,000**	**30,000**	**79,000**	**22,000**
Dechlorination equipment	-	-	-	5,000	-
Distillation and deionization equipment	-	12,000	-	-	12,000
Incubator	-	-	-	11,000	-
Microcystin ADDA Elisa method equipment for regulatory analysis	-	-	-	30,000	-
Microtox - Model 500 Analyzer	-	20,000	20,000	-	-
Refrigerator Bacti Lab	-	-	-	6,000	-
Refrigerator for AA lab	-	-	-	6,000	-
Refrigerator lab	-	-	-	10,000	-
Refrigerator Lab for Taste and Odor analysis	-	-	-	6,000	-
Spectrophotometer	7,000	-	10,000	-	10,000
Turbidimeter	-	-	-	5,000	-
Water Treatment Plants	**2,382,388**	**1,188,136**	**1,088,136**	**1,202,800**	**2,801,000**
Water Works Park	**340,388**	**66,136**	**78,136**	**473,800**	**554,000**
Caustic Soda Pump	6,736	-	-	-	10,000
Chlorine Process Analyzer	10,000	10,000	10,000	10,000	10,000
Coagulant metering pump	16,272	-	-	8,100	20,000
EQ Pump	-	-	-	10,000	-
Flocc Motor equipment over life expectancy	-	-	-	-	36,000
Fluoride metering pump	16,272	-	-	-	20,000
Lab compressor unit	13,200	-	-	-	15,000
LabStrong Fi stream III still 4 LPH Bi- Distilled 240 V	-	-	-	11,200	-
Lighting mixer	93,500	-	-	-	105,000
Low Concentration ozone monitor for contactor	-	24,000	-	-	-
Low concentration ozone monitor for ozone destruct room	-	18,000	-	-	-
Milton Roy key pad controller	-	-	-	20,000	-
Oilless compressor	-	-	45,000	-	50,000
Ozone heat exchanger	-	-	15,000	-	20,000
Ozone monitor in pilot plant, equipment over life expectancy	-	6,000	-	-	10,000
Ozone PLC Upgrade (Programmable Logic Controller)	-	-	-	130,000	-
Phosphoric acid metering pump	8,136	8,136	8,136	-	10,000
Pump 7 stage	-	-	-	15,000	-
Pump Milroy A	-	-	-	30,000	-
Pump Milroy B	-	-	-	-	36,000
Pump Milroy M	-	-	-	-	62,000
Rebuild ozone Generator	-	-	-	130,000	-
Rebuild Pilot Plant	130,000	-	-	-	130,000
Replace Level System MVS	-	-	-	60,000	-
Sodium bisulfite metering pumps	16,272	-	-	-	20,000
Sump Pumps	30,000	-	-	-	-
Surface scatter 7 sc Turbidimeter with 200 controller standard 2	-	-	-	19,500	-
Thickened mixer	-	-	-	15,000	-
Thickener mixer	-	-	-	15,000	-

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Springwells Water Plant	**735,000**	**679,000**	**632,000**	**351,000**	**901,000**
4800 V Toshiba Breakers	90,000	60,000	65,000	10,000	65,000
Allen Bradley PLC (Programmable logic controller) for Filter Consoles in 1931 Filter Plant	25,000	25,000	25,000	25,000	25,000
Alum metering pump replacement- Total 12 units	-	-	-	-	130,000
Alum Transfer Pumps	23,000	25,000	-	-	25,000
Auxiliary Booster Pump Replacement- 2 units	-	-	-	-	12,000
Brass Slip rings & Brush holders-LLP	65,000	65,000	65,000	-	65,000
Carbon Metering Pumps	12,000	12,000	-	25,000	25,000
Chlorinator	52,000	55,000	55,000	75,000	55,000
Condensate Return Pumps& controls	100,000	100,000	65,000	-	100,000
Flocc Drive Replacement- 3 units per year	75,000	75,000	75,000	75,000	75,000
HACH 1720 E Turbidimeter	36,000	30,000	40,000	60,000	60,000
HACH Spectrophotometer	21,000	21,000	21,000	8,000	21,000
HighLift Discharge Valve Cylinders	70,000	70,000	60,000	-	70,000
Low Lift Discharge Vlave Cylinders	52,000	55,000	60,000	-	60,000
Microscope	10,000	10,000	10,000	-	10,000
Multilin	11,000	12,000	12,000	14,000	14,000
Polymer Blending Units	15,000	-	-	-	15,000
Polymer Metering Pump	15,000	-	15,000	15,000	15,000
Replace Steel Slip rings with Brass Split Slip rings for high Lift motors	52,000	52,000	52,000	30,000	45,000
Sychronous Motor Protection Module	11,000	12,000	12,000	14,000	14,000
Northeast Water Plant	**925,000**	**335,000**	**320,000**	**320,000**	**465,000**
Chlorinators	40,000	-	-	-	40,000
Chlorine Evaporator Vessel	-	-	-	-	35,000
Condensate pumps (future replacement)	25,000	-	-	-	25,000
Cone valve	100,000	100,000	100,000	100,000	100,000
Flocculator Drives	500,000	-	-	-	-
High Lift Pumps	200,000	200,000	200,000	200,000	200,000
High lift sump pumps	15,000	15,000	20,000	20,000	20,000
High Pressure Water Pump	20,000	20,000	-	-	20,000
Low Lift Sump Pumps	25,000	-	-	-	25,000
Southwest Water Plant	**238,000**	**95,000**	**45,000**	**45,000**	**484,000**
Allen Bradley input displays for backwash (one for each gallery)	-	-	-	-	34,000
Bearing induction heater	-	-	-	-	40,000
Bobcat / Skidsteer w/ scoop	-	-	-	-	30,000
Carbon Mixer Gear Boxes	-	-	-	-	16,000
Chlorine Evaporators	-	-	-	-	40,000
CL-17 Chlorine Analyzers (15)	20,000	20,000	20,000	20,000	20,000
Digital Autoclave Sterilimatic Sterilizer	-	20,000	-	-	20,000
Electric Pallet Jacks	-	-	-	-	20,000
Filter media (sand and anthracite)	125,000	-	-	-	-
Flocc-Drive Motor gear boxes	30,000	30,000	-	-	30,000
Flocculator motors	12,000	-	-	-	12,000
Hach Turbidimeters Inline monitors (36)	25,000	25,000	25,000	25,000	25,000
Incubator Laboratory	-	-	-	-	17,000
Laboratory Fume Hood	-	-	-	-	15,000
Motorized utility cart for snow removal and equipment transport	-	-	-	-	15,000
Plant Air Compressors (future replacement)	-	-	-	-	30,000
Retrofit 4 way valve for highlift discharge	-	-	-	-	54,000
Sonatax sc 4 Probes and 4 Pivot Mounts sludge blanket level detector	26,000	-	-	-	26,000
Trailer Mount Air Compressor (future replacement)	-	-	-	-	40,000

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Lake Huron Water Plant	**144,000**	**13,000**	**13,000**	**13,000**	**397,000**
Benchtop Spectrophotometer	-	-	-	-	5,000
Electric Chain Hoist	11,000	-	-	-	11,000
Electric Utility Cart	7,000	7,000	7,000	7,000	7,000
Electric winch with davit arm and truck mount	-	-	-	-	10,000
Flail Mower	-	-	-	-	10,000
High Lift Control Power Battery Bank	-	-	-	-	30,000
High Lift Field Cubicle Upgrade	-	-	-	-	280,000
Low Lift Control Power Battery Bank	-	-	-	-	30,000
Megaohmeter Tester, 15000 volt	-	-	-	-	8,000
Online Colorimetric Chlorine Analyzer	6,000	6,000	6,000	6,000	6,000
Outdoor Aerial Lift	75,000	-	-	-	-
Skid Steer	45,000	-	-	-	-
Grand Total	**$ 2,394,888**	**$ 1,231,636**	**$ 1,123,636**	**$ 1,287,300**	**$ 2,828,500**

Five-Year Capital Outlay Plan by Team

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Water Engineering	**$ 5,500**	**$ 11,500**	**$ 5,500**	**$ 5,500**	**$ 5,500**
Water Quality	**7,000**	**32,000**	**30,000**	**79,000**	**22,000**
Water Treatment Plants	**2,382,388**	**1,188,136**	**1,088,136**	**1,202,800**	**2,801,000**
Water Works Park	340,388	66,136	78,136	473,800	554,000
Springwells Water Plant	735,000	679,000	632,000	351,000	901,000
Northeast Water Plant	925,000	335,000	320,000	320,000	465,000
Southwest Water Plant	238,000	95,000	45,000	45,000	484,000
Lake Huron Water Plant	144,000	13,000	13,000	13,000	397,000
Grand Total	**$ 2,394,888**	**$ 1,231,636**	**$ 1,123,636**	**$ 1,287,300**	**$ 2,828,500**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget is below. The expenses are listed in alphabetical order by cost center.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882001 - COO - Water Operations & Field Services	$ 399,700	$ 332,100	$ 477,900	$ 359,600	$ 362,100	$ 364,400	$ 366,900	$ 368,600
2.1 Salaries & Wages	240,700	231,100	309,500	233,900	233,900	233,900	233,900	233,900
2.4 Employee Benefits	65,000	44,400	81,900	60,900	62,100	63,300	64,600	65,900
4.2 Supplies & Other	67,200	56,600	59,700	57,900	59,000	60,000	61,100	61,100
Memberships, Licenses & Subscriptions	45,900	45,500	44,800	45,700	46,600	47,500	48,400	48,400
Office Supplies	2,200	300	2,000	2,000	2,100	2,100	2,200	2,200
Training and Internal Meetings	7,900	3,200	7,900	5,000	5,100	5,100	5,100	5,100
Travel	11,200	7,600	5,000	5,200	5,200	5,300	5,400	5,400
4.3 Contractual Services	40,000	-	40,000	20,400	20,800	21,200	21,600	22,000
Contractual Professional Services	40,000	-	40,000	20,400	20,800	21,200	21,600	22,000
5.1 Capital Program Allocation	(13,200)	-	(13,200)	(13,500)	(13,700)	(14,000)	(14,300)	(14,300)
882101 - Water Director	1,468,800	1,375,500	1,691,500	1,617,800	1,628,600	1,639,400	1,650,400	1,655,100
2.1 Salaries & Wages	594,000	661,200	755,400	782,000	782,000	782,000	782,000	782,000
2.3 Overtime	-	35,200	-	-	-	-	-	-
2.4 Employee Benefits	182,800	143,300	213,900	223,200	227,700	232,200	236,900	241,600
4.2 Supplies & Other	684,000	528,900	692,400	603,000	609,500	616,000	622,500	622,500
Memberships, Licenses & Subscriptions	2,000	800	1,000	1,000	1,000	1,100	1,100	1,100
Mileage and Parking	4,000	3,900	4,000	4,100	4,200	4,200	4,300	4,300
Office Supplies	5,000	3,600	5,000	5,100	5,200	5,300	5,400	5,400
Training and Internal Meetings	334,000	211,800	341,500	259,600	264,700	269,800	274,900	274,900
Travel	60,000	57,800	60,000	61,200	62,400	63,600	64,800	64,800
Tuition Refund	4,000	2,000	4,000	2,000	2,000	2,000	2,000	2,000
Employee Uniform Expense	85,000	109,500	85,000	120,000	120,000	120,000	120,000	120,000
Inspection and Permit Fees	190,000	139,500	191,900	150,000	150,000	150,000	150,000	150,000
4.3 Contractual Services	18,200	6,900	40,000	20,000	20,000	20,000	20,000	20,000
Contractual Operating Services	3,200	-	-	-	-	-	-	-
Contractual Professional Services	15,000	6,900	40,000	20,000	20,000	20,000	20,000	20,000
5.1 Capital Program Allocation	(10,200)	-	(10,200)	(10,400)	(10,600)	(10,800)	(11,000)	(11,000)
882111 - Water Engineering	1,402,900	1,402,000	1,972,600	1,672,300	1,681,700	1,691,300	1,701,000	1,707,000
2.1 Salaries & Wages	1,089,200	1,113,100	1,227,900	2,076,200	2,076,200	2,076,200	2,076,200	2,076,200
2.3 Overtime	100,000	58,600	100,000	129,500	129,500	129,500	129,500	129,500
2.4 Employee Benefits	270,200	236,400	369,200	602,000	614,000	626,300	638,800	651,600
2.5 Transition Services	46,800	33,700	-	-	-	-	-	-
2.6 Personnel Transition Adjustment	(366,000)	-	-	-	-	-	-	-
4.2 Supplies & Other	123,200	37,300	181,000	171,900	173,200	174,600	176,000	176,000
Capital Outlay less than $5,000	-	-	53,600	54,700	55,700	56,800	57,900	57,900
Memberships, Licenses & Subscriptions	16,600	7,000	11,300	27,800	28,000	28,100	28,300	28,300
Mileage and Parking	10,000	8,100	7,000	18,000	18,000	18,000	18,000	18,000
Office Supplies	19,100	10,000	20,100	17,000	17,000	17,000	17,000	17,000
Operating Supplies	7,000	1,200	7,000	15,700	15,700	15,700	15,700	15,700
Postage	500	-	500	500	500	500	500	500
Repairs & Maintenance-Equipment	-	-	-	-	-	-	-	-
Training and Internal Meetings	10,000	6,700	8,000	8,200	8,300	8,500	8,600	8,600
Travel	5,000	1,400	18,500	9,500	9,500	9,500	9,500	9,500
Tuition Refund	5,000	1,500	5,000	3,000	3,000	3,000	3,000	3,000
Employee Uniform Expense	10,000	1,400	10,000	17,500	17,500	17,500	17,500	17,500
Rentals-Miscellaneous	40,000	-	40,000	-	-	-	-	-
4.3 Contractual Services	450,000	326,600	405,000	283,600	287,200	290,800	294,400	294,400
Contractual Professional Services	450,000	326,600	405,000	283,600	287,200	290,800	294,400	294,400
5.1 Capital Program Allocation	(310,500)	(403,700)	(310,500)	(1,590,900)	(1,598,400)	(1,606,100)	(1,613,900)	(1,620,700)

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882121 - Water Quality	**1,392,500**	**1,239,500**	**1,797,500**	**1,856,600**	**1,864,500**	**1,872,600**	**1,880,900**	**1,888,500**
2.1 Salaries & Wages	**910,700**	**801,200**	**1,212,200**	**1,221,400**	**1,221,400**	**1,221,400**	**1,221,400**	**1,221,400**
2.3 Overtime	**50,000**	**34,000**	**55,000**	**50,800**	**50,800**	**50,800**	**50,800**	**50,800**
2.4 Employee Benefits	**358,500**	**388,500**	**450,000**	**450,400**	**459,400**	**468,600**	**478,000**	**487,600**
4.1 Chemicals	**60,600**	**60,300**	**58,600**	**110,400**	**110,800**	**111,100**	**111,500**	**111,500**
4.2 Supplies & Other	**133,800**	**42,800**	**141,900**	**87,100**	**87,700**	**88,500**	**89,100**	**89,100**
Capital Outlay less than $5,000	15,000	10,000	9,000	30,000	30,000	30,000	30,000	30,000
Memberships, Licenses & Subscriptions	2,800	200	2,800	2,900	2,900	3,000	3,000	3,000
Mileage and Parking	500	100	500	500	500	500	500	500
Office Supplies	10,000	7,600	10,000	10,200	10,400	10,600	10,800	10,800
Operating Supplies	25,000	22,900	38,600	41,500	41,900	42,400	42,800	42,800
Postage	45,500	-	46,000	-	-	-	-	-
Printing	35,000	2,000	35,000	2,000	2,000	2,000	2,000	2,000
Miscellaneous Expense	-	-	-	-	-	-	-	-
4.3 Contractual Services	**66,600**	**53,800**	**67,500**	**68,000**	**68,500**	**69,000**	**69,500**	**69,500**
Contractual Operating Services	66,600	53,800	67,500	68,000	68,500	69,000	69,500	69,500
5.1 Capital Program Allocation	**(37,700)**	-	**(37,700)**	**(38,500)**	**(39,200)**	**(40,000)**	**(40,700)**	**(40,700)**
5.2 Shared Services	**(150,000)**	**(141,100)**	**(150,000)**	**(93,000)**	**(94,900)**	**(96,800)**	**(98,700)**	**(100,700)**
Shared Services : Salaries & Wages Reimb	(43,500)	(1,300)	(43,500)	-	-	-	-	-
Shared Services Reimbursement	(106,500)	(139,300)	(106,500)	(93,000)	(94,900)	(96,800)	(98,700)	(100,700)
Shared Services: Employee Benefit Reimb	-	(500)	-	-	-	-	-	-
6.0 Capital Outlay	-	-	-	-	-	-	-	-
882131 - Water Works Park	**15,137,000**	**8,618,600**	**9,281,600**	**9,043,400**	**9,086,600**	**9,130,000**	**9,173,800**	**9,188,400**
2.1 Salaries & Wages	**2,010,000**	**2,081,600**	**1,925,700**	**1,926,300**	**1,926,300**	**1,926,300**	**1,926,300**	**1,926,300**
2.2 Workforce Development	**65,100**	**65,500**	**65,100**	**76,100**	**76,100**	**76,100**	**76,100**	**76,100**
2.3 Overtime	**400,000**	**405,300**	**450,000**	**450,000**	**450,000**	**450,000**	**450,000**	**450,000**
2.4 Employee Benefits	**757,300**	**822,800**	**757,400**	**690,500**	**704,300**	**718,400**	**732,800**	**747,400**
3.1 Electric	**2,058,900**	**2,061,300**	**2,000,000**	**2,200,000**	**2,200,000**	**2,200,000**	**2,200,000**	**2,200,000**
3.2 Gas	**224,100**	**222,200**	**300,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**
3.3 Sewage Service	**15,000**	**14,000**	**100,000**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**
4.1 Chemicals	**802,200**	**962,300**	**1,200,000**	**1,048,700**	**1,058,600**	**1,068,600**	**1,078,600**	**1,078,600**
4.2 Supplies & Other	**950,300**	**780,900**	**1,053,100**	**839,700**	**841,900**	**843,900**	**846,000**	**846,000**
Capital Outlay less than $5,000	25,000	18,300	-	25,000	25,000	25,000	25,000	25,000
Memberships, Licenses & Subscriptions	1,000	200	2,000	1,000	1,000	1,000	1,000	1,000
Mileage and Parking	3,000	2,000	2,000	2,000	2,100	2,100	2,200	2,200
Office Supplies	7,700	10,900	9,500	11,100	11,200	11,200	11,300	11,300
Operating Supplies	310,400	161,700	310,400	189,000	189,000	189,000	189,000	189,000
Repairs & Maintenance-Equipment	573,100	572,400	700,600	593,900	595,700	597,600	599,400	599,400
Travel	-	-	-	-	-	-	-	-
Tuition Refund	1,000	100	2,000	1,000	1,000	1,000	1,000	1,000
Inspection and Permit Fees	9,100	6,600	6,600	6,700	6,900	7,000	7,100	7,100
Operating Supplies-Janitorial	20,000	8,700	20,000	10,000	10,000	10,000	10,000	10,000
4.3 Contractual Services	**1,559,700**	**1,287,800**	**1,546,000**	**1,632,100**	**1,649,400**	**1,666,700**	**1,684,000**	**1,684,000**
Contract Services-Information Technology	300,000	316,200	310,000	328,000	328,000	328,000	328,000	328,000
Contractual Buildings & Grounds Maint	580,000	670,400	678,000	684,400	697,800	711,300	724,700	724,700
Contractual Operating Services	670,700	295,500	548,900	392,700	396,600	400,400	404,300	404,300
Contractual Professional Services	-	-	-	220,000	220,000	220,000	220,000	220,000
Telecom, Managed Security & Network Svcs	9,000	5,700	9,100	7,000	7,000	7,000	7,000	7,000
5.1 Capital Program Allocation	**(115,700)**	**(85,100)**	**(115,700)**	**(90,000)**	**(90,000)**	**(90,000)**	**(90,000)**	**(90,000)**
6.0 Capital Outlay	**6,410,100**	-	-	-	-	-	-	-

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882141 - Springwells Water Plant	**10,563,900**	**10,047,600**	**10,213,100**	**12,413,800**	**12,572,400**	**12,731,600**	**12,890,800**	**12,904,000**
2.1 Salaries & Wages	**2,004,400**	**1,729,100**	**1,923,300**	**1,923,600**	**1,923,600**	**1,923,600**	**1,923,600**	**1,923,600**
2.2 Workforce Development	-	-	-	**36,200**	**36,200**	**36,200**	**36,200**	**36,200**
2.3 Overtime	**275,000**	**281,600**	**290,000**	**281,800**	**281,800**	**281,800**	**281,800**	**281,800**
2.4 Employee Benefits	**739,200**	**660,700**	**699,000**	**674,000**	**687,500**	**701,200**	**715,200**	**729,500**
3.1 Electric	**3,384,700**	**3,385,100**	**3,250,000**	**3,315,000**	**3,380,000**	**3,445,000**	**3,510,000**	**3,510,000**
3.2 Gas	**300,000**	**242,900**	**235,000**	**239,700**	**244,400**	**249,100**	**253,800**	**253,800**
4.1 Chemicals	**1,574,200**	**1,421,500**	**1,529,200**	**1,466,000**	**1,481,000**	**1,496,000**	**1,511,000**	**1,511,000**
4.2 Supplies & Other	**797,600**	**571,400**	**701,000**	**674,100**	**675,100**	**676,300**	**677,300**	**677,300**
Capital Outlay less than $5,000	15,000	7,200	10,000	10,200	10,400	10,600	10,800	10,800
Memberships, Licenses & Subscriptions	500	200	-	-	-	-	-	-
Mileage and Parking	2,500	1,200	2,000	2,000	2,100	2,100	2,200	2,200
Office Supplies	10,500	4,200	6,000	5,700	5,700	5,800	5,800	5,800
Operating Supplies	249,800	127,600	164,000	132,200	132,400	132,700	132,900	132,900
Repairs & Maintenance-Equipment	500,000	424,700	500,000	511,500	512,000	512,500	513,000	513,000
Tuition Refund	-	-	1,000	1,000	1,000	1,100	1,100	1,100
Inspection and Permit Fees	3,000	700	3,000	1,500	1,500	1,500	1,500	1,500
Operating Supplies-Janitorial	16,300	5,600	15,000	10,000	10,000	10,000	10,000	10,000
4.3 Contractual Services	**1,571,200**	**1,755,300**	**1,668,000**	**3,887,400**	**3,948,500**	**4,009,700**	**4,070,900**	**4,069,800**
Contract Services-Information Technology	40,000	500	40,000	40,200	40,400	40,600	40,800	40,800
Contractual Buildings & Grounds Maint	401,200	405,200	493,000	415,000	415,000	415,000	415,000	415,000
Contractual Operating Services	1,100,000	1,318,900	1,100,000	3,176,500	3,236,700	3,297,000	3,357,300	3,356,200
Contractual Professional Services	30,000	30,700	35,000	255,700	256,400	257,100	257,800	257,800
5.1 Capital Program Allocation	**(82,400)**	-	**(82,400)**	**(84,000)**	**(85,700)**	**(87,300)**	**(89,000)**	**(89,000)**
882151 - Northeast Water Plant	**10,336,400**	**9,400,300**	**9,926,500**	**9,576,600**	**9,644,700**	**9,713,600**	**9,782,200**	**9,794,200**
2.1 Salaries & Wages	**1,858,600**	**1,584,100**	**1,714,800**	**1,690,400**	**1,690,400**	**1,690,400**	**1,690,400**	**1,690,400**
2.2 Workforce Development	**37,600**	**35,500**	**32,500**	**39,900**	**39,900**	**39,900**	**39,900**	**39,900**
2.3 Overtime	**250,000**	**211,200**	**250,000**	**241,900**	**241,900**	**241,900**	**241,900**	**241,900**
2.4 Employee Benefits	**687,500**	**610,800**	**625,900**	**579,800**	**591,400**	**603,300**	**615,300**	**627,600**
3.1 Electric	**3,500,000**	**3,379,100**	**4,000,000**	**3,100,000**	**3,100,000**	**3,100,000**	**3,100,000**	**3,100,000**
3.2 Gas	**150,000**	**141,600**	**133,000**	**135,700**	**138,300**	**141,000**	**143,600**	**143,600**
3.3 Sewage Service	**250,000**	**144,200**	**200,000**	**204,000**	**208,000**	**212,000**	**216,000**	**216,000**
3.4 Water Service	**36,000**	-	**36,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
4.1 Chemicals	**937,300**	**905,200**	**1,000,000**	**1,020,000**	**1,040,000**	**1,060,000**	**1,080,000**	**1,080,000**
4.2 Supplies & Other	**454,100**	**342,700**	**483,800**	**487,000**	**488,800**	**490,700**	**492,500**	**492,500**
Capital Outlay less than $5,000	15,000	8,800	15,000	15,300	15,600	15,900	16,200	16,200
Memberships, Licenses & Subscriptions	1,000	200	2,000	2,000	2,100	2,100	2,200	2,200
Mileage and Parking	1,000	700	1,000	1,000	1,000	1,100	1,100	1,100
Office Supplies	3,500	3,600	4,500	4,600	4,700	4,800	4,900	4,900
Operating Supplies	100,000	111,700	123,000	127,200	128,400	129,700	130,900	130,900
Postage	100	-	100	100	100	100	100	100
Repairs & Maintenance-Equipment	300,000	205,100	300,000	315,500	315,500	315,500	315,500	315,500
Travel	500	-	-	-	-	-	-	-
Tuition Refund	-	-	1,500	1,500	1,600	1,600	1,600	1,600
Inspection and Permit Fees	3,000	2,500	6,700	4,800	4,800	4,900	5,000	5,000
Operating Supplies-Janitorial	30,000	10,100	30,000	15,000	15,000	15,000	15,000	15,000
4.3 Contractual Services	**2,262,200**	**2,068,100**	**1,537,400**	**2,126,900**	**2,155,300**	**2,184,000**	**2,212,400**	**2,212,400**
Contract Services-Information Technology	56,000	60,000	56,000	63,000	63,000	63,000	63,000	63,000
Contractual Buildings & Grounds Maint	275,000	316,700	300,000	323,200	323,300	323,500	323,600	323,600
Contractual Operating Services	1,931,200	1,681,400	1,170,400	1,509,500	1,537,600	1,565,800	1,593,900	1,593,900

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882161 - Southwest Water Plant	**8,790,300**	**8,022,500**	**6,681,700**	**6,975,500**	**6,924,700**	**6,974,400**	**7,023,800**	**7,035,500**
2.1 Salaries & Wages	**1,639,200**	**1,727,400**	**1,584,900**	**1,654,800**	**1,654,800**	**1,654,800**	**1,654,800**	**1,654,800**
2.2 Workforce Development	**37,600**	**6,300**	**32,500**	-	-	-	-	-
2.3 Overtime	**375,000**	**380,600**	**250,000**	**233,300**	**233,300**	**233,300**	**233,300**	**233,300**
2.4 Employee Benefits	**615,000**	**670,800**	**593,700**	**565,700**	**577,000**	**588,600**	**600,300**	**612,300**
3.1 Electric	**1,582,600**	**1,265,200**	**1,300,000**	**1,326,000**	**1,352,000**	**1,378,000**	**1,404,000**	**1,404,000**
3.2 Gas	**139,000**	**127,300**	**140,400**	**140,000**	**140,000**	**140,000**	**140,000**	**140,000**
3.3 Sewage Service	**344,800**	**200,400**	**300,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**
4.1 Chemicals	**656,000**	**439,400**	**700,000**	**453,400**	**453,700**	**454,100**	**454,400**	**454,400**
4.2 Supplies & Other	**1,019,200**	**824,200**	**768,300**	**765,900**	**773,300**	**780,700**	**788,000**	**788,000**
Capital Outlay less than $5,000	10,000	3,200	10,000	10,200	10,400	10,600	10,800	10,800
Memberships, Licenses & Subscriptions	300	200	1,500	1,500	1,600	1,600	1,600	1,600
Mileage and Parking	8,400	1,700	2,500	2,500	2,600	2,600	2,700	2,700
Office Supplies	15,000	12,900	12,500	12,700	13,000	13,200	13,500	13,500
Operating Supplies	175,000	157,200	175,000	172,000	172,900	173,900	174,800	174,800
Repairs & Maintenance-Equipment	472,500	254,700	300,300	295,100	295,700	296,300	296,900	296,900
Inspection and Permit Fees	3,000	2,600	3,000	3,100	3,100	3,200	3,200	3,200
Rentals-Miscellaneous	-	-	3,000	3,100	3,100	3,200	3,200	3,200
Operating Supplies-Janitorial	10,000	8,300	10,000	10,200	10,400	10,600	10,800	10,800
Property Taxes	325,000	383,400	250,500	255,500	260,500	265,500	270,500	270,500
4.3 Contractual Services	**2,448,700**	**2,452,600**	**1,078,700**	**1,672,100**	**1,576,500**	**1,581,100**	**1,585,500**	**1,585,500**
Contract Services-Information Technology	75,000	71,500	73,000	74,500	75,900	77,400	78,800	78,800
Contractual Buildings & Grounds Maint	350,000	429,600	615,000	466,300	466,600	467,000	467,300	467,300
Contractual Operating Services	2,013,700	1,949,200	388,700	906,300	808,900	811,600	814,200	814,200
Contractual Professional Services	5,000	2,300	-	223,000	223,000	223,000	223,000	223,000
Telecom, Managed Security & Network Svcs	5,000	-	2,000	2,000	2,100	2,100	2,200	2,200
5.1 Capital Program Allocation	**(66,800)**	**(71,700)**	**(66,800)**	**(60,700)**	**(60,900)**	**(61,200)**	**(61,500)**	**(61,800)**
882171 - Lake Huron Water Plant	**12,059,000**	**11,542,600**	**12,636,600**	**12,126,200**	**12,153,900**	**12,181,900**	**12,209,900**	**12,221,900**
2.1 Salaries & Wages	**1,699,400**	**1,576,500**	**1,633,700**	**1,652,300**	**1,652,300**	**1,652,300**	**1,652,300**	**1,652,300**
2.2 Workforce Development	**37,600**	-	-	-	-	-	-	-
2.3 Overtime	**300,000**	**305,300**	**365,000**	**365,000**	**365,000**	**365,000**	**365,000**	**365,000**
2.4 Employee Benefits	**647,300**	**618,400**	**617,800**	**565,200**	**576,600**	**588,100**	**599,800**	**611,800**
2.6 Personnel Transition Adjustment	**(180,000)**	-	-	-	-	-	-	-
3.1 Electric	**6,167,300**	**6,107,700**	**6,500,000**	**6,100,000**	**6,100,000**	**6,100,000**	**6,100,000**	**6,100,000**
3.2 Gas	**202,700**	**167,300**	**202,700**	**190,000**	**190,000**	**190,000**	**190,000**	**190,000**
3.3 Sewage Service	**101,000**	**62,500**	**101,000**	**70,000**	**70,000**	**70,000**	**70,000**	**70,000**
3.4 Water Service	**14,000**	-	**14,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
4.1 Chemicals	**1,168,000**	**1,016,000**	**1,186,300**	**1,076,200**	**1,078,200**	**1,080,200**	**1,082,200**	**1,082,200**
4.2 Supplies & Other	**658,000**	**479,700**	**508,700**	**559,700**	**559,900**	**560,500**	**560,700**	**560,700**
Capital Outlay less than $5,000	15,000	11,700	-	15,000	15,000	15,000	15,000	15,000
Memberships, Licenses & Subscriptions	2,000	700	500	500	500	500	500	500
Mileage and Parking	5,000	3,300	6,000	6,100	6,200	6,400	6,500	6,500
Office Supplies	12,000	10,000	6,200	10,900	10,900	11,000	11,000	11,000
Operating Supplies	195,000	206,100	200,000	207,500	207,500	207,500	207,500	207,500
Postage	1,000	200	3,000	3,100	3,100	3,200	3,200	3,200
Repairs & Maintenance-Equipment	400,000	227,500	250,000	285,000	285,000	285,100	285,100	285,100
Travel	-	-	-	-	-	-	-	-
Tuition Refund	-	-	-	-	-	-	-	-
Inspection and Permit Fees	3,000	600	3,000	1,500	1,500	1,500	1,500	1,500
Operating Supplies-Janitorial	5,000	4,400	5,000	5,100	5,200	5,300	5,400	5,400
Property Taxes	10,000	6,800	15,000	10,000	10,000	10,000	10,000	10,000
Operating Supplies-Automotive	10,000	8,400	20,000	15,000	15,000	15,000	15,000	15,000
4.3 Contractual Services	**1,279,900**	**1,209,200**	**1,543,600**	**1,579,700**	**1,594,500**	**1,609,200**	**1,624,000**	**1,624,000**
Contract Services-Information Technology	20,800	-	20,000	20,400	20,800	21,200	21,600	21,600
Contractual Buildings & Grounds Maint	350,000	366,000	445,000	420,000	420,000	420,000	420,000	420,000
Contractual Operating Services	907,100	832,100	1,076,600	907,300	921,600	935,900	950,200	950,200
Contractual Professional Services	2,000	11,100	2,000	232,000	232,100	232,100	232,200	232,200
5.1 Capital Program Allocation	**(36,200)**	-	**(36,200)**	**(36,900)**	**(37,600)**	**(38,400)**	**(39,100)**	**(39,100)**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882321 - Ford Rd Pumping Station	**542,000**	**401,000**	**392,000**	**394,600**	**402,300**	**409,900**	**417,600**	**417,600**
3.1 Electric	**450,000**	**377,800**	**350,000**	**357,000**	**364,000**	**371,000**	**378,000**	**378,000**
3.2 Gas	**60,000**	**3,600**	**10,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
3.3 Sewage Service	**2,000**	-	**2,000**	**2,000**	**2,100**	**2,100**	**2,200**	**2,200**
3.4 Water Service	**5,000**	-	**5,000**	**5,100**	**5,200**	**5,300**	**5,400**	**5,400**
4.2 Supplies & Other	**25,000**	**19,600**	**25,000**	**25,500**	**26,000**	**26,500**	**27,000**	**27,000**
Repairs & Maintenance-Equipment	25,000	19,600	25,000	25,500	26,000	26,500	27,000	27,000
882322 - Eastside Pumping Station	**160,000**	**34,200**	**80,000**	**43,000**	**43,100**	**43,100**	**43,200**	**43,200**
3.1 Electric	**100,000**	**29,400**	**50,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**
3.2 Gas	**35,000**	**300**	**5,000**	**3,000**	**3,100**	**3,100**	**3,200**	**3,200**
4.2 Supplies & Other	**25,000**	**4,500**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	4,500	25,000	10,000	10,000	10,000	10,000	10,000
882323 - Northwest Pumping Station	**36,000**	**8,300**	**37,000**	**17,000**	**17,000**	**17,000**	**17,000**	**17,000**
3.1 Electric	**7,000**	**6,400**	**7,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
3.3 Sewage Service	**2,000**	**200**	**2,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
3.4 Water Service	**2,000**	**100**	**3,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
4.2 Supplies & Other	**25,000**	**1,600**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	1,600	25,000	10,000	10,000	10,000	10,000	10,000
882324 - West Service Center Pumping Station	**750,000**	**745,600**	**760,000**	**770,000**	**785,000**	**800,000**	**815,000**	**815,000**
3.1 Electric	**675,000**	**697,200**	**700,000**	**714,000**	**728,000**	**742,000**	**756,000**	**756,000**
3.2 Gas	**15,000**	**3,000**	**10,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
4.2 Supplies & Other	**60,000**	**45,400**	**50,000**	**51,000**	**52,000**	**53,000**	**54,000**	**54,000**
Repairs & Maintenance-Equipment	60,000	45,400	50,000	51,000	52,000	53,000	54,000	54,000
882325 - Michigan Ave Pumping Station	**129,900**	**83,500**	**119,000**	**100,800**	**102,800**	**104,600**	**106,600**	**106,600**
3.1 Electric	**100,000**	**81,500**	**90,000**	**91,800**	**93,600**	**95,400**	**97,200**	**97,200**
3.3 Sewage Service	**2,000**	**800**	**2,000**	**2,000**	**2,100**	**2,100**	**2,200**	**2,200**
3.4 Water Service	**2,900**	**800**	**2,000**	**2,000**	**2,100**	**2,100**	**2,200**	**2,200**
4.2 Supplies & Other	**25,000**	**400**	**25,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
Repairs & Maintenance-Equipment	25,000	400	25,000	5,000	5,000	5,000	5,000	5,000
882326 - West Chicago Rd Pumping Station	**105,000**	**50,500**	**75,000**	**61,000**	**62,000**	**63,000**	**64,000**	**64,000**
3.1 Electric	**80,000**	**42,500**	**50,000**	**51,000**	**52,000**	**53,000**	**54,000**	**54,000**
4.2 Supplies & Other	**25,000**	**8,000**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	8,000	25,000	10,000	10,000	10,000	10,000	10,000
882327 - Electric Ave Pumping Station	**45,700**	**18,700**	**50,000**	**35,500**	**36,000**	**36,500**	**37,000**	**37,000**
3.1 Electric	**20,700**	**16,600**	**25,000**	**25,500**	**26,000**	**26,500**	**27,000**	**27,000**
4.2 Supplies & Other	**25,000**	**2,100**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	2,100	25,000	10,000	10,000	10,000	10,000	10,000
882328 - Orion Township Pumping Station	**180,000**	**71,200**	**100,000**	**81,500**	**83,000**	**84,500**	**86,000**	**86,000**
3.1 Electric	**150,000**	**69,800**	**70,000**	**71,400**	**72,800**	**74,200**	**75,600**	**75,600**
3.2 Gas	**5,000**	**1,400**	**5,000**	**5,100**	**5,200**	**5,300**	**5,400**	**5,400**
4.2 Supplies & Other	**25,000**	-	**25,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
Repairs & Maintenance-Equipment	25,000	-	25,000	5,000	5,000	5,000	5,000	5,000
882329 - North Service Center Pumping Station	**2,450,000**	**2,094,500**	**2,230,000**	**2,127,000**	**2,129,000**	**2,131,000**	**2,133,000**	**2,133,000**
3.1 Electric	**2,250,000**	**1,972,900**	**2,100,000**	**2,000,000**	**2,000,000**	**2,000,000**	**2,000,000**	**2,000,000**
3.2 Gas	**50,000**	**20,800**	**30,000**	**25,000**	**25,000**	**25,000**	**25,000**	**25,000**
4.2 Supplies & Other	**150,000**	**100,800**	**100,000**	**102,000**	**104,000**	**106,000**	**108,000**	**108,000**
Repairs & Maintenance-Equipment	150,000	100,800	100,000	102,000	104,000	106,000	108,000	108,000
882330 - Adams Road Pumping Station	**550,000**	**545,100**	**575,000**	**520,000**	**520,000**	**520,000**	**520,000**	**520,000**
3.1 Electric	**525,000**	**532,500**	**550,000**	**500,000**	**500,000**	**500,000**	**500,000**	**500,000**
4.2 Supplies & Other	**25,000**	**12,600**	**25,000**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**
Repairs & Maintenance-Equipment	25,000	12,600	25,000	20,000	20,000	20,000	20,000	20,000
882331 - Newburgh Pumping Station	**395,000**	**375,800**	**390,000**	**382,300**	**389,600**	**396,900**	**404,200**	**404,200**
3.1 Electric	**370,000**	**372,100**	**365,000**	**372,300**	**379,600**	**386,900**	**394,200**	**394,200**
4.2 Supplies & Other	**25,000**	**3,700**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	3,700	25,000	10,000	10,000	10,000	10,000	10,000

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882332 - Franklin Road Pumping Station	**850,000**	**845,100**	**855,000**	**830,600**	**831,200**	**831,800**	**832,400**	**832,400**
3.1 Electric	**825,000**	**796,000**	**825,000**	**800,000**	**800,000**	**800,000**	**800,000**	**800,000**
4.2 Supplies & Other	**25,000**	**33,300**	**30,000**	**30,600**	**31,200**	**31,800**	**32,400**	**32,400**
Repairs & Maintenance-Equipment	25,000	33,300	30,000	30,600	31,200	31,800	32,400	32,400
6.0 Capital Outlay	-	**15,800**	-	-	-	-	-	-
882333 - Roseville Pumping Station	-	-	**30,200**	**10,300**	**10,400**	**10,500**	**10,600**	**10,600**
3.1 Electric	-	-	**5,000**	**5,100**	**5,200**	**5,300**	**5,400**	**5,400**
3.4 Water Service	-	-	**200**	**200**	**200**	**200**	**200**	**200**
4.2 Supplies & Other	-	-	**25,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
Repairs & Maintenance-Equipment	-	-	25,000	5,000	5,000	5,000	5,000	5,000
882334 - Wick Road Pumping Station	**561,400**	**558,200**	**540,500**	**571,000**	**581,500**	**592,000**	**602,500**	**602,500**
3.1 Electric	**475,000**	**475,100**	**475,000**	**484,500**	**494,000**	**503,500**	**513,000**	**513,000**
3.2 Gas	**6,000**	**4,700**	**5,000**	**5,100**	**5,200**	**5,300**	**5,400**	**5,400**
3.3 Sewage Service	**400**	**400**	**500**	**500**	**500**	**500**	**500**	**500**
4.2 Supplies & Other	**80,000**	**78,000**	**60,000**	**80,900**	**81,800**	**82,700**	**83,600**	**83,600**
Repairs & Maintenance-Equipment	80,000	78,000	60,000	80,900	81,800	82,700	83,600	83,600
882335 - Joy Road Pumping Station	**605,500**	**592,400**	**630,500**	**592,300**	**592,700**	**593,100**	**593,400**	**593,400**
3.1 Electric	**575,000**	**555,300**	**600,000**	**550,000**	**550,000**	**550,000**	**550,000**	**550,000**
3.2 Gas	**5,000**	**3,000**	**5,000**	**4,000**	**4,000**	**4,100**	**4,100**	**4,100**
3.3 Sewage Service	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**
4.2 Supplies & Other	**25,000**	**33,600**	**25,000**	**37,800**	**38,200**	**38,500**	**38,800**	**38,800**
Repairs & Maintenance-Equipment	25,000	33,600	25,000	37,800	38,200	38,500	38,800	38,800
882336 - Schoolcraft Pumping Station	**405,000**	**408,900**	**456,000**	**451,300**	**451,600**	**452,000**	**452,300**	**452,300**
3.1 Electric	**370,000**	**385,800**	**425,000**	**425,000**	**425,000**	**425,000**	**425,000**	**425,000**
3.2 Gas	**10,000**	**1,300**	**6,000**	**6,100**	**6,200**	**6,400**	**6,500**	**6,500**
4.2 Supplies & Other	**25,000**	**13,500**	**25,000**	**20,200**	**20,400**	**20,600**	**20,800**	**20,800**
Repairs & Maintenance-Equipment	25,000	13,500	25,000	20,200	20,400	20,600	20,800	20,800
4.3 Contractual Services	-	**8,300**	-	-	-	-	-	-
Contractual Operating Services	-	8,300	-	-	-	-	-	-
882337 - Ypsilanti Pumping Station	**391,500**	**375,000**	**351,500**	**353,300**	**360,200**	**367,000**	**373,800**	**373,800**
3.1 Electric	**360,000**	**357,300**	**320,000**	**326,400**	**332,800**	**339,200**	**345,600**	**345,600**
3.2 Gas	**6,500**	**5,300**	**6,500**	**6,600**	**6,800**	**6,900**	**7,000**	**7,000**
4.2 Supplies & Other	**25,000**	**12,400**	**25,000**	**20,300**	**20,600**	**20,900**	**21,200**	**21,200**
Repairs & Maintenance-Equipment	25,000	12,400	25,000	20,300	20,600	20,900	21,200	21,200
882338 - Imlay Pumping Station	**2,105,000**	**2,091,300**	**1,775,000**	**1,805,300**	**1,840,600**	**1,875,900**	**1,911,200**	**1,911,200**
3.1 Electric	**2,080,000**	**2,078,400**	**1,750,000**	**1,785,000**	**1,820,000**	**1,855,000**	**1,890,000**	**1,890,000**
4.2 Supplies & Other	**25,000**	**12,900**	**25,000**	**20,300**	**20,600**	**20,900**	**21,200**	**21,200**
Repairs & Maintenance-Equipment	25,000	12,900	25,000	20,300	20,600	20,900	21,200	21,200
882339 - Rochester Pumping Station	**283,000**	**182,400**	**235,000**	**224,200**	**228,400**	**232,600**	**236,800**	**236,800**
3.1 Electric	**250,000**	**173,300**	**200,000**	**204,000**	**208,000**	**212,000**	**216,000**	**216,000**
3.2 Gas	**7,000**	**7,800**	**9,000**	**9,200**	**9,400**	**9,500**	**9,700**	**9,700**
3.3 Sewage Service	**1,000**	**100**	**1,000**	**1,000**	**1,000**	**1,100**	**1,100**	**1,100**
4.2 Supplies & Other	**25,000**	**1,200**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	1,200	25,000	10,000	10,000	10,000	10,000	10,000
882340 - Haggerty Road Pumping Station	**266,000**	**211,300**	**281,000**	**271,100**	**276,200**	**281,400**	**286,500**	**286,500**
3.1 Electric	**210,000**	**221,300**	**225,000**	**229,500**	**234,000**	**238,500**	**243,000**	**243,000**
3.2 Gas	**30,000**	**(15,500)**	**30,000**	**30,600**	**31,200**	**31,800**	**32,400**	**32,400**
3.3 Sewage Service	**1,000**	**500**	**1,000**	**1,000**	**1,000**	**1,100**	**1,100**	**1,100**
4.2 Supplies & Other	**25,000**	**5,000**	**25,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
Repairs & Maintenance-Equipment	25,000	5,000	25,000	10,000	10,000	10,000	10,000	10,000
887601 - Water System Operations Unallocated	**1,149,100**	-	**1,954,500**	**2,644,200**	**3,624,900**	**4,530,400**	**5,463,000**	**6,821,200**
7.0 Unallocated Reserve	**1,149,100**	-	**1,954,500**	**2,644,200**	**3,624,900**	**4,530,400**	**5,463,000**	**6,821,200**
Grand Total	**$ 73,510,600**	**$ 61,673,700**	**$ 66,596,200**	**$ 67,928,100**	**$ 69,286,700**	**$ 70,672,400**	**$ 72,085,800**	**$ 73,527,500**

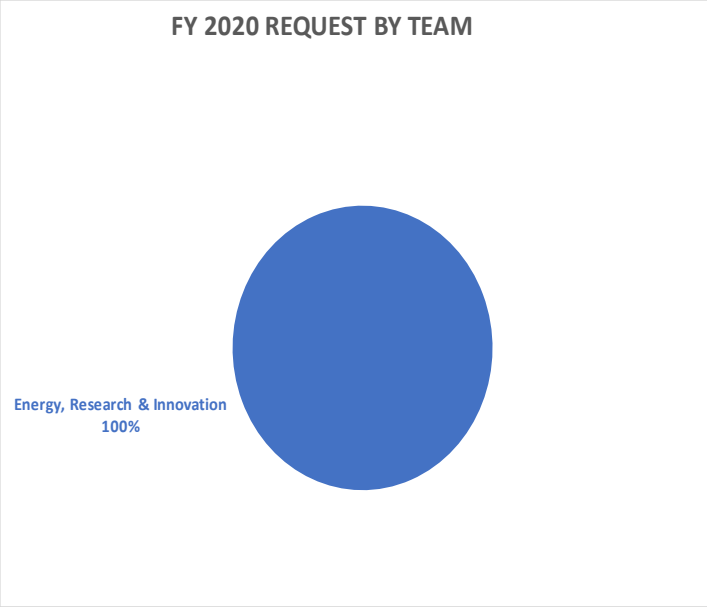
Highlights

The Energy, Research & Innovation Area strategic initiatives include:

- **Advance the Energy Management Program**
  Complete an Investment Grade Audit of the Water Resource Recovery Facility (WRRF) through Energy Service Contracting.
  Implement water system-wide a real-time asset intelligence software to optimize pumping strategies.
  Install additional electric metering equipment for tracking of energy consumption at a more granular level to establish a data platform from which energy optimization and reduction can be achieved.
  Implement energy reduction opportunities found through the participation in the State of Michigan's Wastewater Infrastructure Accelerator Program which is intended to accelerate a pathway toward sustainable infrastructure of the future.
- **Pursue Designation of Utility of the Future**
  Conduct & coordinate research that moves the Water Resource Recovery Facility to a Utility of the Future, as described by the Water Environment Federation, National Association of Clean Water Agencies and Water Environment & Reuse Foundation.
- **Pursue Research of Treatment & Monitoring**
  Treatment techniques for emerging contaminates of concern.
  Innovative monitoring tools.

Organization

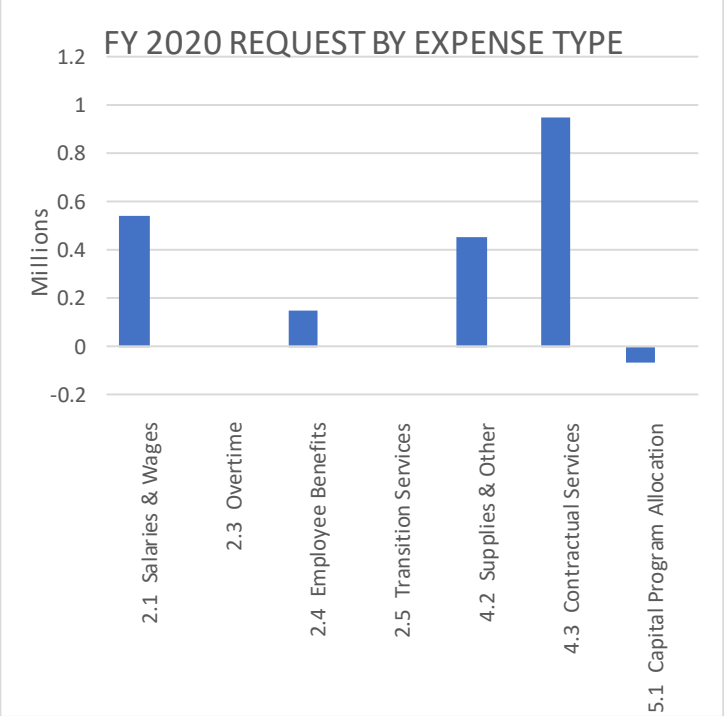
The GLWA Energy, Research & Innovation Area will help identify key areas for collaboration across research programs, research coordination and priorities, and streamlining of energy management to enable the development of technology and promote innovation as well as economic growth.



Expense Categories

There are two major categories of Energy, Research & Innovation expenses in the Operations and Maintenance Budget as listed below.

- ❖ Contractual Services
- ❖ Salaries & Wages



Contractual Services is the highest expense category for Energy, Research & Innovation. The level of contractual services reflects the decision to contract for services that will help to accomplish the following:

- Implement conservation measures
- Monitor energy consumption
- Assess business decisions for sustainability
- Coordinate research efforts to provide cost savings
- Identify and implement the latest advancements in managing water quality

The Energy, Research & Innovation Area is reaching a steady state in staffing. As a result of progress in staff placement, there has been a restructuring of current positions in order to accommodate the higher level of expertise required, to support the day to day operational decision-making needs, and to reduce the utilization of contracts. Accordingly, salaries & wages is the second highest expense category.

Biennial Budget Request

The biennial reflects an increase in FY 2020 as a result of the ramp up of the contractual services initiatives defined above.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 264,000	$ 219,500	$ 689,500	$ 695,300	$ 5,800	0.8%	$ 698,300
4.2 Supplies & Other	22,800	5,700	314,000	456,300	142,300	45.3%	457,100
4.3 Contractual Services	371,600	388,100	522,900	952,200	429,300	82.1%	718,000
5.1 Capital Program Allocation	(45,600)	-	(62,500)	(63,800)	(1,300)	2.1%	(65,000)
Grand Total	$ 612,800	$ 613,300	$ 1,463,900	$ 2,040,000	$ 576,100	39.4%	$ 1,808,400

Personnel Budget

Energy, Research & Innovation personnel consists of 6 positions for FY 2020 and is largely comprised of staffing that will provide ongoing monitoring of developments in order to allow new research priorities to be set and also phase out topics that are no longer relevant. Research and innovation are essential pillars of a promising future strategy for shaping energy supplies of tomorrow. The staffing level is in the tables below.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Energy, Research & Innovation	0.00	6.00	6.00	6.00	6.00	6.00	6.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Energy, Research & Innovation	0.00	6.00	6.00	6.00	6.00	6.00	6.00

Personnel Budget - The table below presents the Water Operations personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

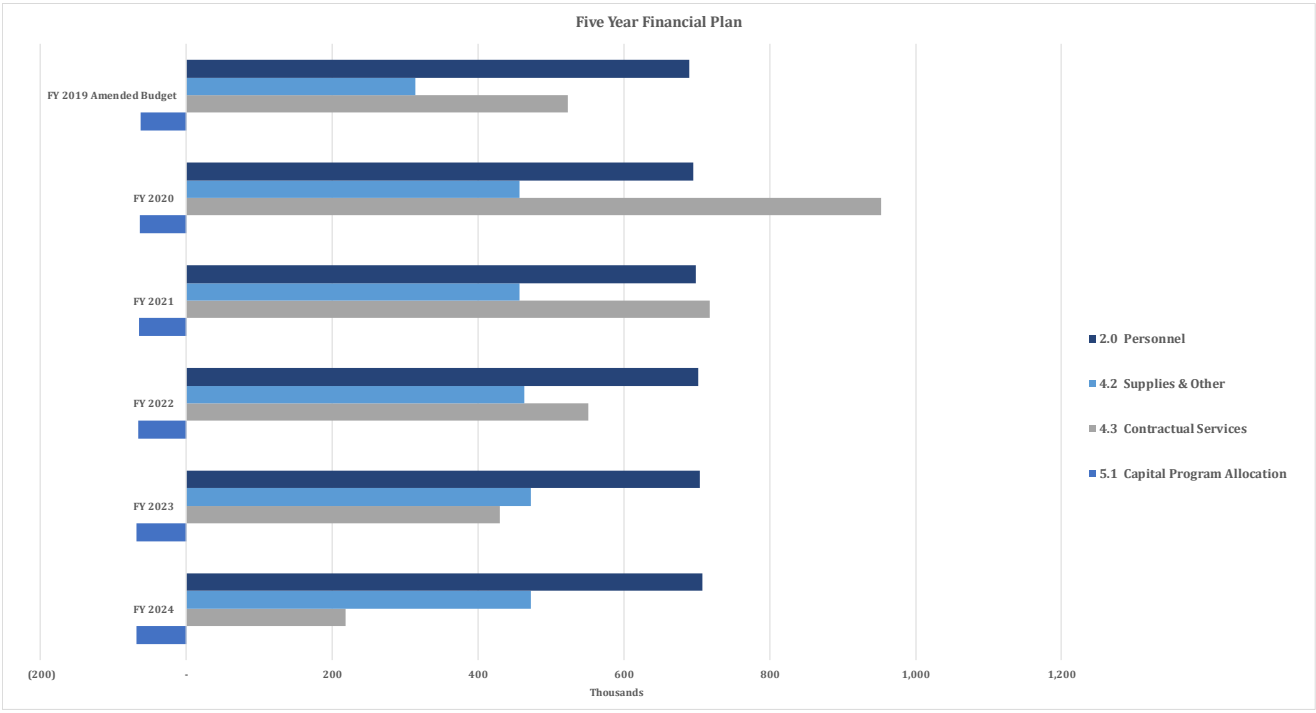
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved Budget	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Energy, Research & Innovation	$ 264,000	$ 689,500	$ 695,300	$ 698,300	$ 701,400	$ 704,600	$ 707,900

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

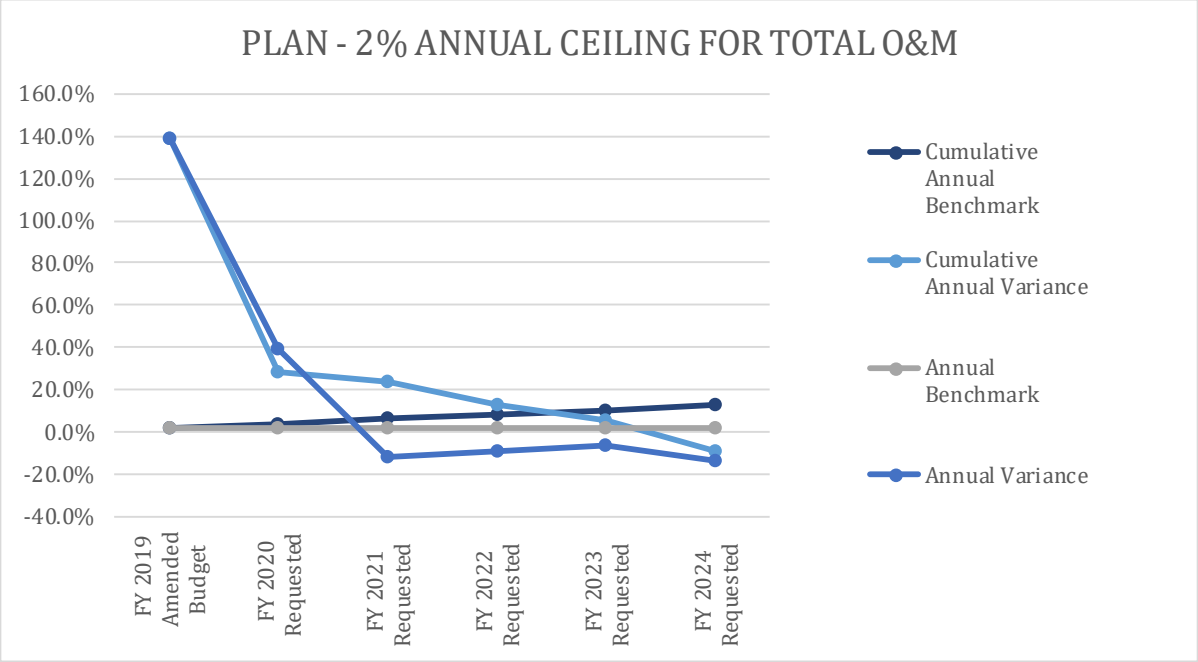
Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 689,500	$ 695,300	$ 5,800	0.8%	$ 698,300	$ 701,400	$ 704,600	$ 707,900
4.2 Supplies & Other	314,000	456,300	142,300	45.3%	457,100	463,800	472,600	472,600
4.3 Contractual Services	522,900	952,200	429,300	82.1%	718,000	551,100	429,700	218,000
5.1 Capital Program Allocation	(62,500)	(63,800)	(1,300)	2.1%	(65,000)	(66,400)	(67,700)	(67,700)
Grand Total	$ 1,463,900	$ 2,040,000	$ 576,100	39.4%	$ 1,808,400	$ 1,649,900	$ 1,539,200	$ 1,330,800



Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Energy, Research & Innovation Group's financial plan reflects a Five Year Overall decrease of 9.1% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This decrease is not unexpected given the consistency of these major initiatives. And while there is a decreased expense in the short-term, it is believed that this is the result of stabilizing the staffing level and realigning the expenses to reflect existing contracts and upcoming projects. The stabilization and realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

The key performance indicators listed below provides an indication of where the focus of the Energy, Research & Innovation Area is and what the group strives to achieve.

- Project Budgeting & Tracking
- Implementation of technology to improve service delivery
- Investigation of emerging Contaminants of Concern (CC)

Capital Outlay

Energy, Research & Innovations capital outlay is funded by the Improvement & Extension (I&E) budget.

(not a component of this group)

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882501 - Energy, Research & Innovation	**$ 612,800**	**$ 613,300**	**$ 1,463,900**	**$ 2,040,000**	**$ 1,808,400**	**$ 1,649,900**	**$ 1,539,200**	**$ 1,330,800**
2.1 Salaries & Wages	**193,600**	**184,300**	**542,600**	**542,500**	**542,500**	**542,500**	**542,500**	**542,500**
2.4 Employee Benefits	**70,400**	**35,200**	**146,900**	**152,800**	**155,800**	**158,900**	**162,100**	**165,400**
4.2 Supplies & Other	**22,800**	**5,700**	**314,000**	**456,300**	**457,100**	**463,800**	**472,600**	**472,600**
Capital Outlay less than $5,000	-	-	-	-	2,000	-	-	-
Memberships, Licenses & Subscriptions	200	200	298,800	438,400	436,800	445,200	453,600	453,600
Mileage and Parking	4,600	-	2,000	1,500	1,500	1,600	1,600	1,600
Operating Supplies	-	800	2,000	5,000	5,100	5,100	5,300	5,300
Training and Internal Meetings	10,500	1,200	4,400	4,500	4,600	4,700	4,800	4,800
Travel	7,500	3,500	6,800	6,900	7,100	7,200	7,300	7,300
4.3 Contractual Services	**371,600**	**388,100**	**522,900**	**952,200**	**718,000**	**551,100**	**429,700**	**218,000**
Contractual Professional Services	371,600	388,100	522,900	952,200	718,000	551,100	429,700	218,000
5.1 Capital Program Allocation	**(45,600)**	-	**(62,500)**	**(63,800)**	**(65,000)**	**(66,400)**	**(67,700)**	**(67,700)**
Capital Program: Salaries & Wages-Direct	-	-	(16,900)	(17,300)	(17,600)	(18,000)	(18,300)	(18,300)
Capital Program: Salaries & Wages-Indire	(45,600)	-	(45,600)	(46,500)	(47,400)	(48,400)	(49,400)	(49,400)
Grand Total	**$ 612,800**	**$ 613,300**	**$ 1,463,900**	**$ 2,040,000**	**$ 1,808,400**	**$ 1,649,900**	**$ 1,539,200**	**$ 1,330,800**

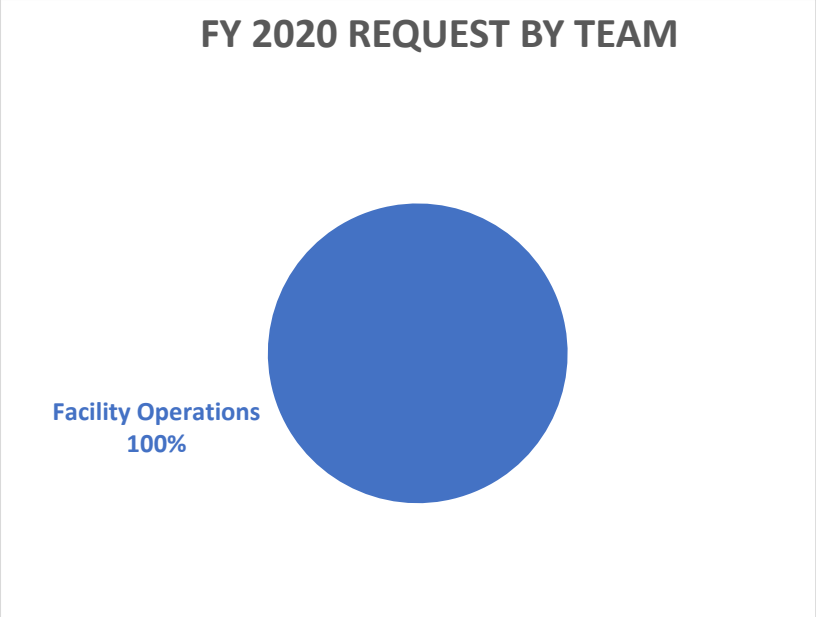
Highlights

The Facility Operations Area strategic initiatives include:

- **Improving buildings and grounds efficiency:**
  Ensure facilities, buildings and grounds are properly maintained, secure, environmentally safe and upgraded to support GLWA's specific operations
- **Proper staffing levels:**
  Ensure adequate staffing levels in order to increase proactive facility maintenance

Organization

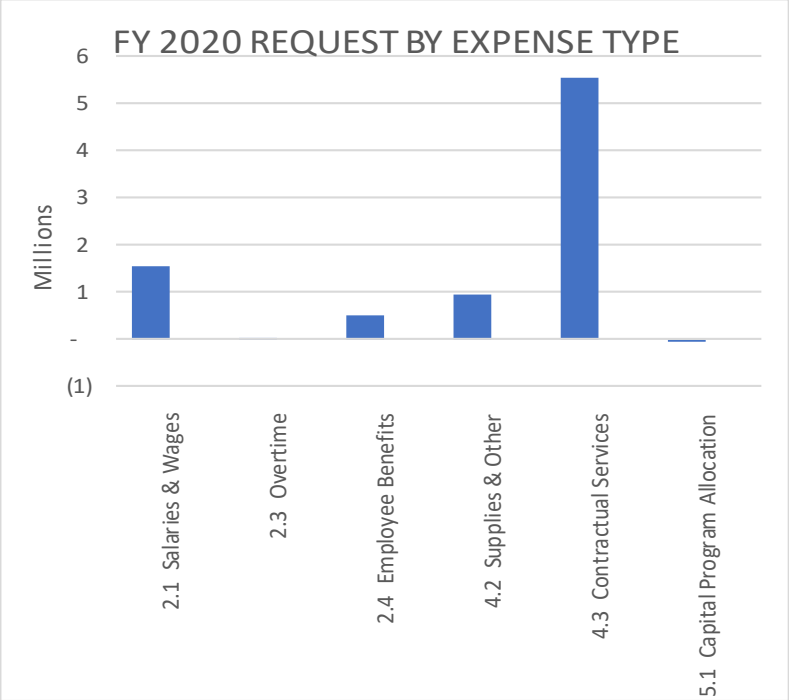
The GLWA Facility Operations Area is responsible for maintaining and managing all properties, such as the grounds and structures associated with the water and wastewater system.



Expense Categories

There are two major categories of Facility Operations expenses in the Operations and Maintenance Budget as listed below.

- Contractual Services
- Salaries & Wages



Contractual Services is the highest expense category for Facility Operations. The level of contractual services reflects the decision to contract for certain non-core services which includes lawn care maintenance, snow removal, rubbish removal, extermination services, elevator maintenance, preventative maintenance, DWSD shared services (OPS-006 – Shared Facilities Shared Cost) as well as the efficient management of peak workload activities.

The Facility Operations Area is reaching a steady state in staffing and accommodating the higher level of expertise required in order to efficiently maintain the GLWA facilities as needed. Accordingly, salaries & wages is the second highest expense category.

Biennial Budget Request

The biennial reflects an increase in FY 2020 as a result of the shared services contract with DWSD (OPS-006 – Shared Facilities Shared Cost) for Randolph & Huber facilities increasing ($1.2 million). As noted in the personnel budget section below, the full-time equivalents number is increasing by 3 although wages are lower due to a mix of classifications and budget vs. actuals in starting salaries.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 1,487,900	$ 1,589,200	$ 2,131,600	$ 2,090,400	$ (41,200)	-1.9%	$ 2,100,500
3.1 Electric	-	-	-	-	-	N/A	-
3.2 Gas	-	-	-	-	-	N/A	-
3.3 Sewage Service	-	-	-	-	-	N/A	-
3.4 Water Service	-	-	-	-	-	N/A	-
4.1 Chemicals	-	-	-	-	-	N/A	-
4.2 Supplies & Other	1,493,500	731,100	1,110,000	963,200	(146,800)	-13.2%	972,000
4.3 Contractual Services	4,852,000	5,392,900	4,106,000	5,546,400	1,440,400	35.1%	5,583,800
5.1 Capital Program Allocation	(60,600)	-	(60,600)	(61,800)	(1,200)	2.0%	(63,000)
5.2 Shared Services	(8,000)	54,600	(8,000)	-	8,000	-100.0%	-
6.0 Capital Outlay	-	6,300	302,500	-	(302,500)	-100.0%	-
Grand Total	$ 7,764,800	$ 7,774,100	$ 7,581,500	$ 8,538,200	$ 956,700	12.6%	$ 8,593,300

Personnel Budget

Facility Operations personnel consists of 25 positions for FY 2020 and is largely comprised of operations staffing that perform a variety of skilled facility and fleet work relative to the operations and maintenance of water and wastewater facilities. The staffing level is in the tables below.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Facility Operations	22.00	22.00	25.00	25.00	25.00	25.00	25.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Facility Operations	22.00	22.00	25.00	25.00	25.00	25.00	25.00

Personnel Budget - The table below presents the Water Operations personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

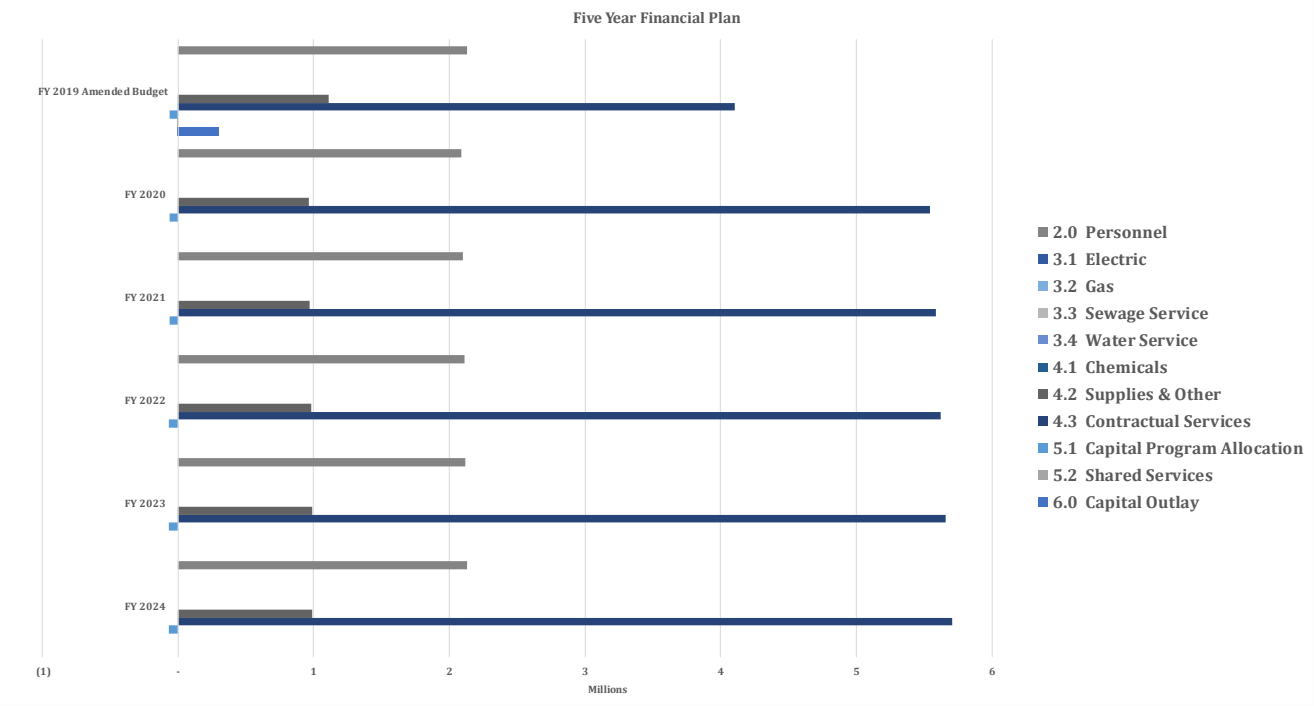
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved Budget	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Facility Operations	$ 1,630,900	$ 2,201,600	$ 2,090,400	$ 2,100,500	$ 2,110,800	$ 2,121,400	$ 2,132,100

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

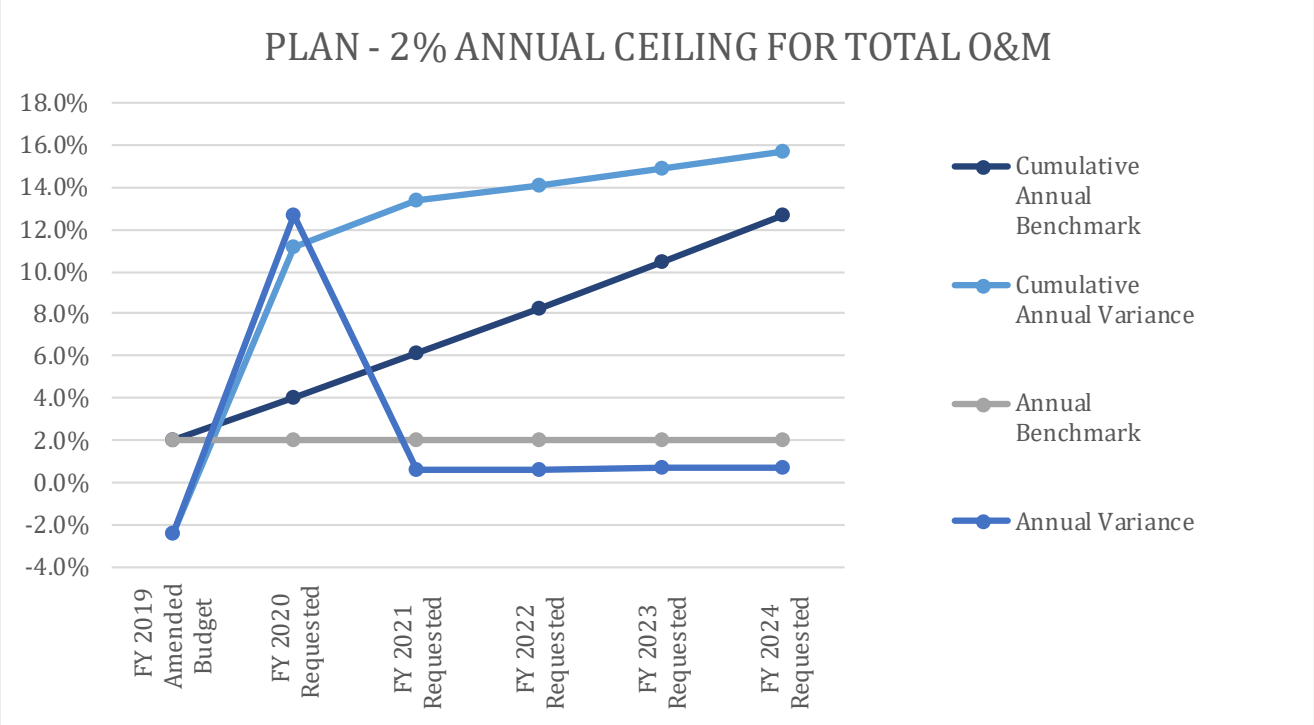
Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 2,131,600	$ 2,090,400	$ (41,200)	-1.9%	$ 2,100,500	$ 2,110,800	$ 2,121,400	$ 2,132,100
3.1 Electric	-	-	-	N/A	-	-	-	-
3.2 Gas	-	-	-	N/A	-	-	-	-
3.3 Sewage Service	-	-	-	N/A	-	-	-	-
3.4 Water Service	-	-	-	N/A	-	-	-	-
4.1 Chemicals	-	-	-	N/A	-	-	-	-
4.2 Supplies & Other	1,110,000	963,200	(146,800)	-13.2%	972,000	980,800	989,700	989,700
4.3 Contractual Services	4,106,000	5,546,400	1,440,400	35.1%	5,583,800	5,622,100	5,661,400	5,710,200
5.1 Capital Program Allocation	(60,600)	(61,800)	(1,200)	2.0%	(63,000)	(64,200)	(65,400)	(65,400)
5.2 Shared Services	(8,000)	-	8,000	-100.0%	-	-	-	-
6.0 Capital Outlay	302,500	-	(302,500)	-100.0%	-	-	-	-
Grand Total	7,581,500	8,538,200	956,700	12.6%	$ 8,593,300	$ 8,649,500	$ 8,707,100	$ 8,766,600



Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Facility Operations Group's financial plan reflects a Five Year Overall increase of 15.6% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This increase is not unexpected given the consistency of these major initiatives. And while there is an increased expense in the short-term, it is believed that this is the result of stabilizing the staffing level and realigning the expenses to reflect existing contracts and upcoming projects. The stabilization and realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

The key performance indicators listed below provides an indication of where the focus of the Facility Operations Area is and what the group strives to achieve.

- Project Budgeting & Tracking
- Facility Maintenance Completion

Capital Outlay

Facility Operations capital outlay is funded by the Improvement & Extension (I&E) budget.

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Facility Operations	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**
Chiller Replacement - DeCal	15,000	15,000	15,000	15,000	15,000
Condensate Pump System	10,000	10,000	10,000	10,000	10,000
Furniture ensemble to include Desk,Credenza; File Cabinet, Guest/Task chairs	50,000	50,000	50,000	50,000	50,000
Furniture ensemble to include Desk,Credenza; File Cabinet, Guest/Task chairs	50,000	50,000	50,000	50,000	50,000
Grand Total	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882421 - Facility Operations	**$ 7,764,800**	**$ 7,774,100**	**$ 7,581,500**	**$ 8,538,200**	**$ 8,593,300**	**$ 8,649,500**	**$ 8,707,100**	**$ 8,766,600**
2.1 Salaries & Wages	**1,169,300**	**1,170,700**	**1,575,500**	**1,560,100**	**1,560,100**	**1,560,100**	**1,560,100**	**1,560,100**
2.3 Overtime	**20,000**	**21,700**	**108,000**	**25,000**	**25,000**	**25,000**	**25,000**	**25,000**
2.4 Employee Benefits	**441,600**	**396,800**	**518,100**	**505,300**	**515,400**	**525,700**	**536,300**	**547,000**
2.6 Personnel Transition Adjustment	**(143,000)**	-	**(70,000)**	-	-	-	-	-
4.2 Supplies & Other	**1,493,500**	**731,100**	**1,110,000**	**963,200**	**972,000**	**980,800**	**989,700**	**989,700**
Capital Outlay less than $5,000	90,000	87,800	50,000	100,000	100,000	100,000	100,000	100,000
Employee Uniform Expense	25,000	1,600	50,000	15,000	15,000	15,000	15,000	15,000
Inspection and Permit Fees	25,000	1,700	50,000	10,000	10,000	10,000	10,000	10,000
Memberships, Licenses & Subscriptions	9,800	700	7,000	2,500	2,500	2,500	2,500	2,500
Mileage and Parking	2,000	200	2,000	2,000	2,100	2,100	2,200	2,200
Office Supplies	27,300	15,200	20,000	20,400	20,800	21,200	21,600	21,600
Operating Supplies	250,000	234,700	250,000	291,000	292,000	293,000	294,000	294,000
Operating Supplies-Fuel	-	-	-	-	-	-	-	-
Operating Supplies-Janitorial	13,500	8,800	13,500	13,800	14,000	14,300	14,600	14,600
Rentals-Buildings	44,000	-	44,000	20,000	20,000	20,000	20,000	20,000
Rentals-Miscellaneous	100,000	18,100	100,000	25,000	25,000	25,000	25,000	25,000
Repairs & Maintenance-Buildings & Ground	889,400	359,500	491,000	448,000	455,000	462,100	469,100	469,100
Repairs & Maintenance-Equipment	-	200	-	-	-	-	-	-
Training and Internal Meetings	10,000	100	25,000	10,000	10,000	10,000	10,000	10,000
Travel	2,500	1,000	2,500	2,500	2,600	2,600	2,700	2,700
Tuition Refund	5,000	1,500	5,000	3,000	3,000	3,000	3,000	3,000
4.3 Contractual Services	**4,852,000**	**5,392,900**	**4,106,000**	**5,546,400**	**5,583,800**	**5,622,100**	**5,661,400**	**5,710,200**
Contractual Buildings & Grounds Maint	2,458,000	2,241,000	2,000,000	2,330,400	2,305,800	2,281,200	2,256,600	2,256,600
Contractual Operating Services	2,394,000	3,151,900	2,106,000	3,216,000	3,278,000	3,340,900	3,404,800	3,453,600
5.1 Capital Program Allocation	**(60,600)**	-	**(60,600)**	**(61,800)**	**(63,000)**	**(64,200)**	**(65,400)**	**(65,400)**
Capital Program: Salaries & Wages-Direct	(60,600)	-	(60,600)	(61,800)	(63,000)	(64,200)	(65,400)	(65,400)
5.2 Shared Services	**(8,000)**	**54,600**	**(8,000)**	-	-	-	-	-
Shared Services : Salaries & Wages Reimb	(8,000)	40,100	(8,000)	-	-	-	-	-
Shared Services: Employee Benefit Reimb	-	14,500	-	-	-	-	-	-
6.0 Capital Outlay	-	**6,300**	**302,500**	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	-	6,300	302,500	-	-	-	-	-
Grand Total	**$ 7,764,800**	**$ 7,774,100**	**$ 7,581,500**	**$ 8,538,200**	**$ 8,593,300**	**$ 8,649,500**	**$ 8,707,100**	**$ 8,766,600**

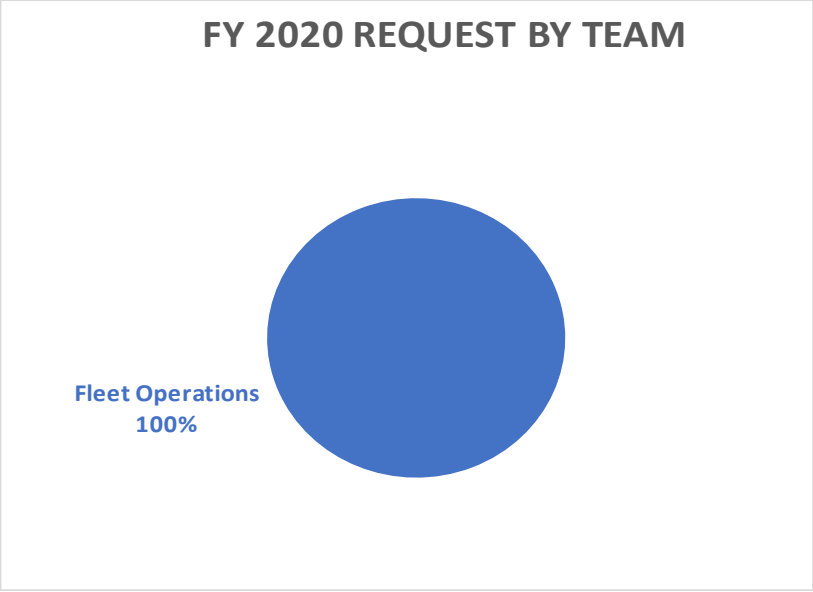
Highlights

The Fleet Operations Area strategic initiatives include:

- **Improving vehicle efficiency:**
  Ensure vehicles are properly maintained, functioning properly and safely as well as matched to the job requirements to support GLWA's specific operations
- **Proper staffing levels:**
  Ensure adequate proactive fleet maintenance and upgrades

Organization

The GLWA Fleet Operations Area is responsible for maintaining and managing all vehicles, such as the cars, trucks, lifts, vactors, etc. associated with the water and wastewater system while ensuring vehicles and equipment are properly matched to the job requirements and functioning properly and safely.

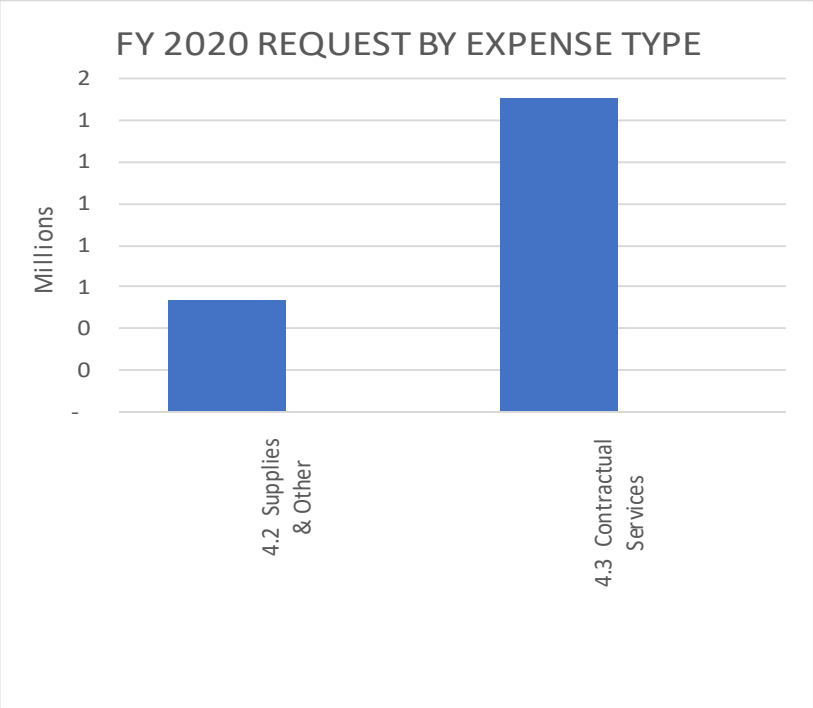


Expense Categories

There is one major category of Fleet Operations expenses in the Operations and Maintenance Budget as listed below.

- Contractual Services

Contractual Services is the highest expense category for Fleet Operations. The level of contractual services reflects the shared service agreement with Detroit Water and Sewerage Department (DWSD) to manage and maintain all fleet vehicles ($1.5 million).



Biennial Budget Request

The biennial reflects a decrease in FY 2020 as a result of stabilizing the contractual services DWSD shared services agreement (OPS-001 – Fleet).

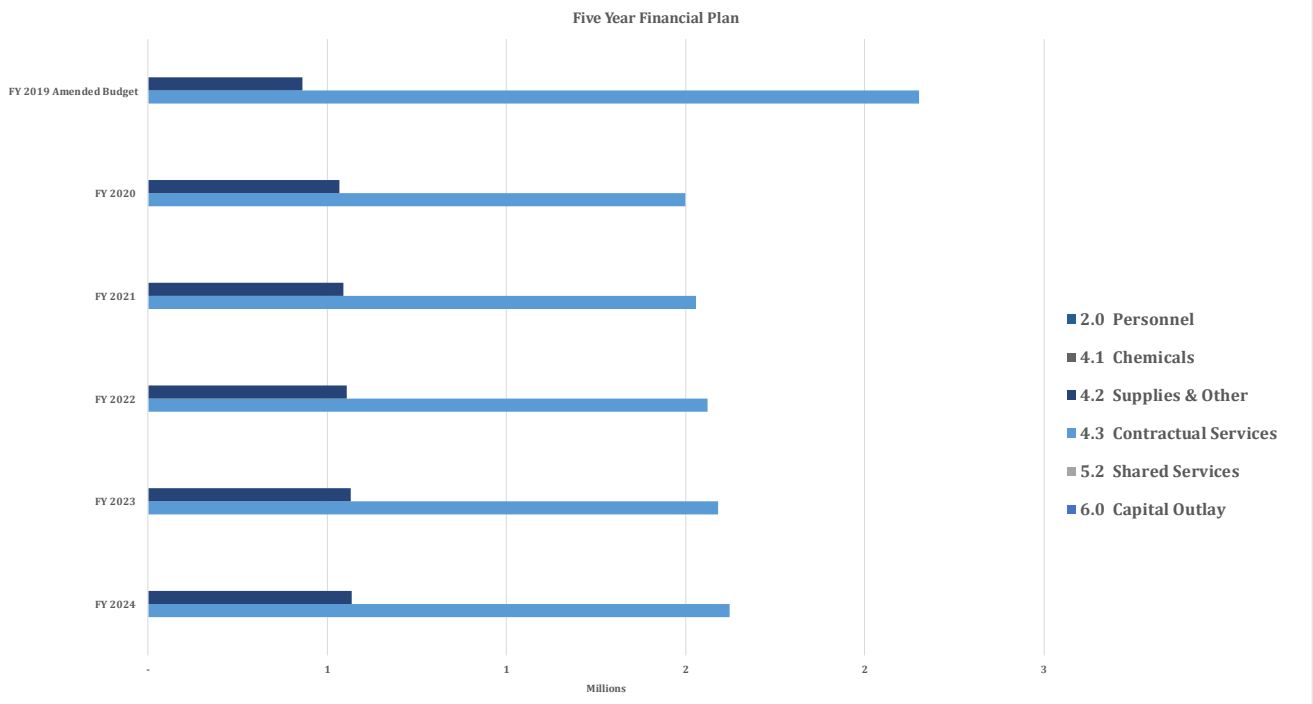
Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	-	-	-	-	-	N/A	-
4.1 Chemicals	-	-	-	-	-	N/A	-
4.2 Supplies & Other	587,200	561,300	431,000	534,500	103,500	24.0%	544,800
4.3 Contractual Services	1,530,900	1,524,500	2,150,900	1,500,000	(650,900)	-30.3%	1,530,000
5.2 Shared Services	-	-	-	-	-	N/A	-
6.0 Capital Outlay	-	-	-	-	-	N/A	-
Grand Total	$ 2,118,100	$ 2,085,800	$ 2,581,900	$ 2,034,500	$(547,400)	-21.2%	$ 2,074,800

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

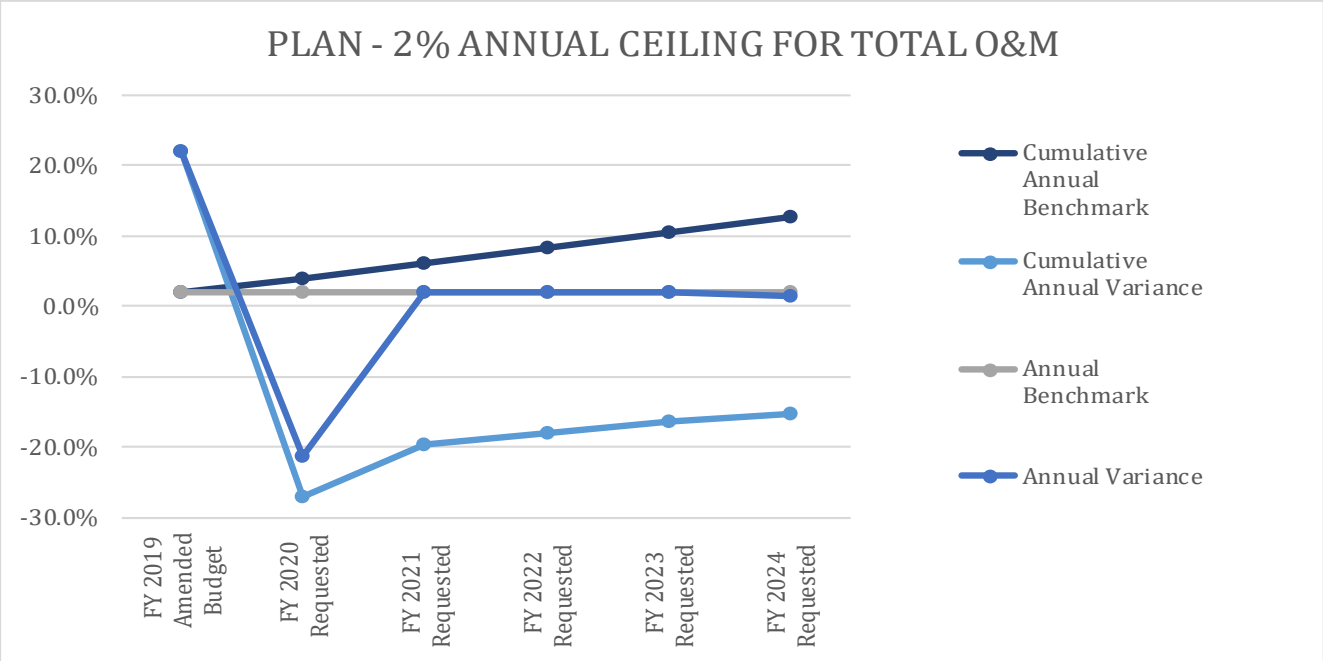
Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	-	-	-	N/A	-	-	-	-
4.1 Chemicals	-	-	-	N/A	-	-	-	-
4.2 Supplies & Other	431,000	534,500	103,500	24.0%	544,800	555,300	565,700	567,600
4.3 Contractual Services	2,150,900	1,500,000	(650,900)	-30.3%	1,530,000	1,560,600	1,591,800	1,623,600
5.2 Shared Services	-	-	-	N/A	-	-	-	-
6.0 Capital Outlay	-	-	-	N/A	-	-	-	-
Grand Total	2,581,900	2,034,500	(547,400)	-21.2%	$ 2,074,800	$ 2,115,900	$ 2,157,500	$ 2,191,200



Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Fleet Operations Group's financial plan reflects a Five Year Overall decrease of 15.1% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This decrease is not unexpected given the consistency of these major initiatives. And while there is a decreased expense in the short-term, it is believed that this is the result of realigning the expenses to reflect existing contracts and upcoming projects. The realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

"Open for 1.2019 Revised Draft"

Capital Outlay

Fleet Operations capital outlay is funded by the Improvement & Extension (I&E) budget.

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Fleet Operations	**$1,510,141**	**$2,542,586**	**$2,305,242**	**$3,011,599**	**$ 777,287**
Flail Mower (Lake Huron WTP)	-	-	-	4,000	-
Ford F-350 (Extended Cab) Seats 5-6 Carry Engineering tools and equipment (Water Engineering request)	-	-	50,000	-	-
Front Loader Tractor (Lake Huron WTP)	-	-	-	70,000	-
Information from Vehicle Spreadsheet	1,040,141	2,072,586	1,785,242	2,922,599	777,287
Motorized utility cart for snow removal and equipment transport (Southwest WTP)	-	-	-	15,000	-
Vactor/JetRodder	470,000	470,000	470,000	-	-
Grand Total	**$1,510,141**	**$2,542,586**	**$2,305,242**	**$3,011,599**	**$ 777,287**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget is reflected below. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882422 - Fleet Operations	**$ 2,118,100**	**$ 2,085,800**	**$ 2,581,900**	**$ 2,034,500**	**$ 2,074,800**	**$ 2,115,900**	**$ 2,157,500**	**$ 2,191,200**
4.2 Supplies & Other								
Inspection and Permit Fees	1,000	100	1,000	1,000	1,000	1,100	1,100	1,100
Operating Supplies-Automotive	5,000	1,600	5,000	10,000	10,000	10,100	10,100	10,100
Repairs & Maintenance-Automotive	75,000	49,900	75,000	76,500	78,000	79,500	81,000	81,000
Operating Supplies – Fuel	506,200	509,700	350,000	447,000	455,800	464,600	473,500	475,400
4.3 Contractual Services								
Contractual Operating Services	1,530,900	1,524,500	2,150,900	1,500,000	1,530,000	1,560,600	1,591,800	1,623,600
Grand Total	**$ 2,118,100**	**$ 2,085,800**	**$ 2,581,900**	**$ 2,034,500**	**$ 2,074,800**	**$ 2,115,900**	**$ 2,157,500**	**$ 2,191,200**

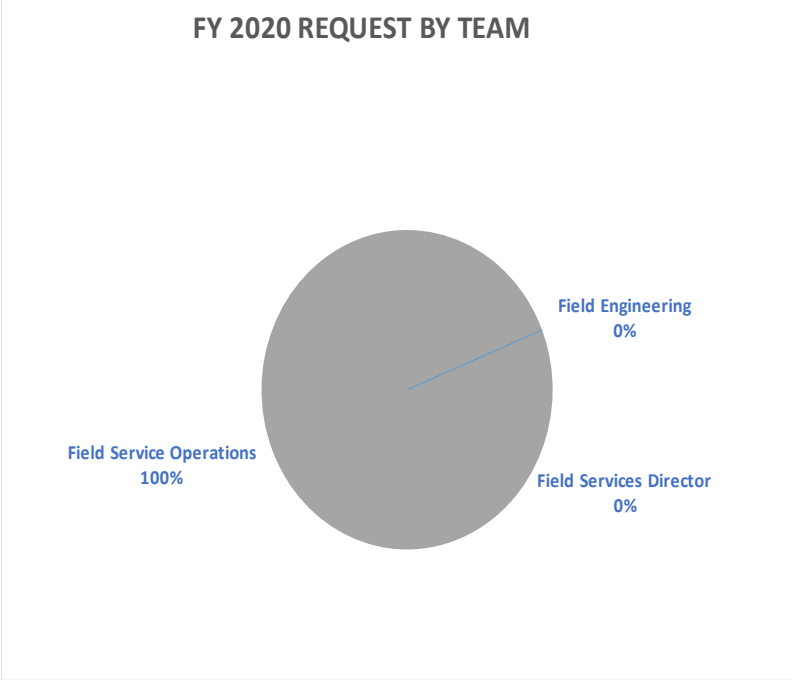
Highlights

The Field Service Operations Area strategic initiatives include:

- **Improving buildings and grounds efficiency**
  Ensure facilities, buildings and grounds are properly maintained, secure, environmentally safe and upgraded to support GLWA's specific operations
- **Proper staffing levels**
  Ensure adequate staffing levels in order to increase proactive facility maintenance

Organization

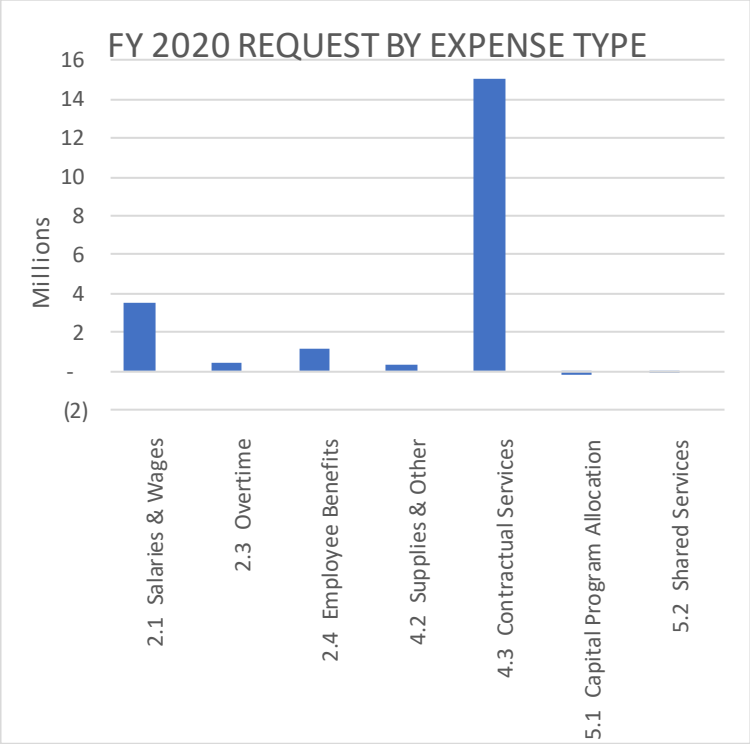
The GLWA Field Service Operations Area is responsible for ensuring reliable service of customer delivery and collection in the water system, as well as all associated equipment, such as valves, gates, interceptors and siphons.



Expense Categories

There are two major categories of Field Service Operations expenses in the Operations and Maintenance Budget as listed below.

- Contractual Services
- Salaries & Wages



Contractual Services is the highest expense category for Field Service Operations. The level of contractual services supports the complex nature of the water transmission and wastewater collection system as well as the efficient management of peak workload activities.

The Field Service Operations Area is reaching a steady state in staffing and accommodating the higher level of expertise required in order to reduce the utilization of contracts. Accordingly, salaries & wages is the second highest expense category.

Biennial Budget Request

The biennial reflects an overall decrease in FY 2020 as a result of personnel reaching a steady state with minimal use of contractual transitional services. The contractual services increase is largely comprised of a restructuring between Systems Control and Field Service Operations. The pumping stations portion of the Lakeshore Global Corporation contract was transferred to Field Service Operations from Systems Control which increased contractual services by $1.8 million.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 4,990,200	$ 5,057,100	$ 6,552,200	$ 5,214,200	$ (1,877,300)	-26.5%	$ 5,238,600
3.1 Electric	-	-	-	-	-	N/A	-
3.2 Gas	-	-	-	-	-	N/A	-
3.3 Sewage Service	-	-	-	-	-	N/A	-
3.4 Water Service	-	-	-	-	-	N/A	-
4.1 Chemicals	-	-	-	-	-	N/A	-
4.2 Supplies & Other	474,100	220,500	849,700	402,700	(489,000)	-54.8%	388,100
4.3 Contractual Services	11,305,000	11,326,000	12,983,200	15,021,300	2,038,100	15.7%	15,251,700
5.1 Capital Program Allocation	(170,000)	(65,900)	(147,300)	(128,400)	41,600	-24.5%	(128,900)
5.2 Shared Services	-	33,300	-	(16,700)	(16,700)	N/A	(17,000)
6.0 Capital Outlay	-	-	-	-	-	N/A	-
Grand Total	$ 16,599,300	$ 16,571,000	$ 20,237,800	$ 20,493,100	$ (303,300)	-1.5%	$ 20,732,500

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Field Engineering	$ 900,500	$ 899,100	$ -	$ -	$ (1,472,100)	-100.0%	$ -
Field Service Operations	11,998,500	11,989,700	20,237,800	20,493,100	6,858,400	50.3%	20,732,500
Field Services Director	3,700,300	3,682,200	-	-	(5,689,600)	-100.0%	-
Grand Total	$ 16,599,300	$ 16,571,000	$ 20,237,800	$ 20,493,100	$ (303,300)	-1.5%	$ 20,732,500

Personnel Budget

Field Service Operations personnel consists of 65 positions for FY 2020. During FY 2018, thirty-four (34) staffing and contract positions were transferred to Field Service Operations from Systems Control and five (5) staffing positions were transferred to other water operating areas) and is largely comprised of operations staffing that perform a variety of skilled field work relative to the operations and maintenance of water and wastewater systems. The staffing level is in the tables below.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Field Service Operations	**44.00**	**65.00**	**65.00**	**65.00**	**65.00**	**65.00**	**65.00**
Field Services Director	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Field Engineering	17.00	0.00	0.00	0.00	0.00	0.00	0.00
Field Service Operations	26.00	65.00	65.00	65.00	65.00	65.00	65.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Field Services	**44.00**	**65.00**	**65.00**	**65.00**	**65.00**	**65.00**	**65.00**
Field Services Director	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Field Engineering	17.00	0.00	0.00	0.00	0.00	0.00	0.00
Field Service Operations	26.00	65.00	65.00	65.00	65.00	65.00	65.00

Personnel Budget - The table below presents the Water Operations personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

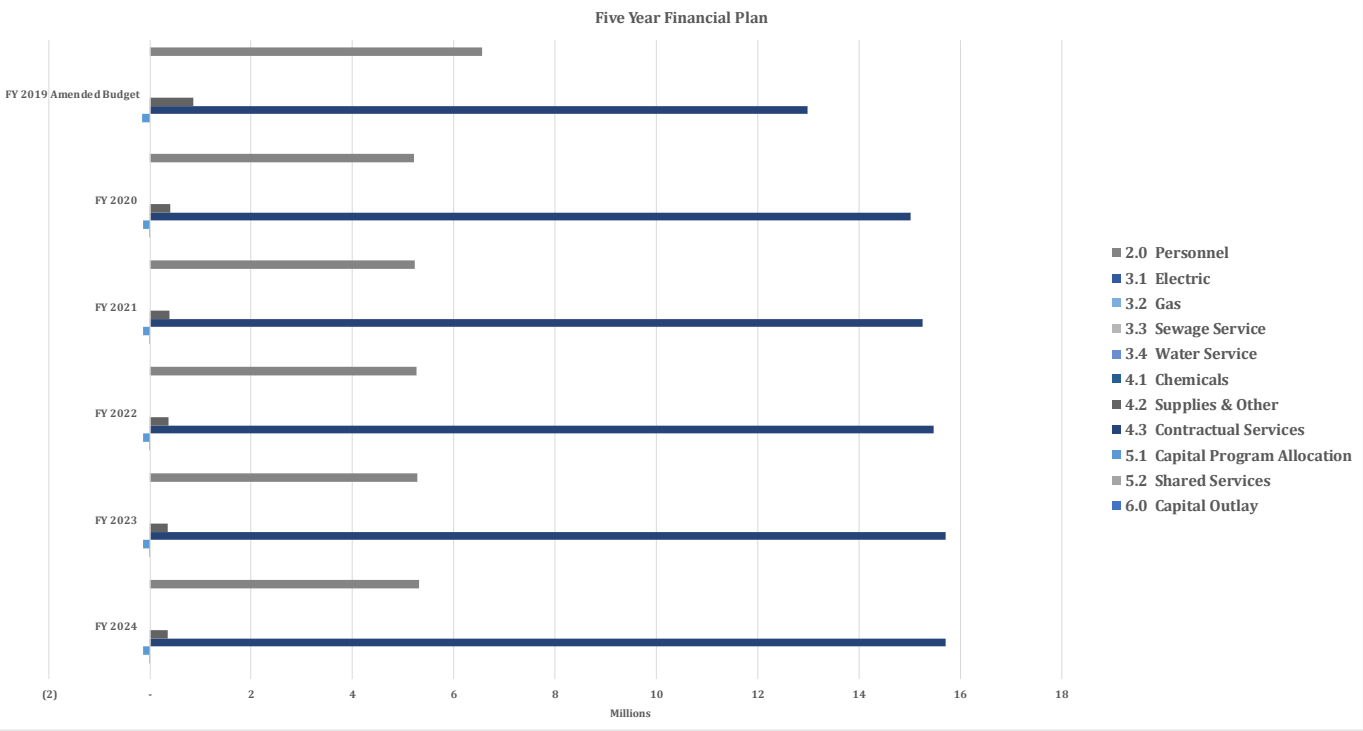
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved Budget	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Field Services	**$ 5,147,200**	**$ 6,552,200**	**$ 5,214,200**	**$ 5,238,600**	**$ 5,263,500**	**$ 5,289,000**	**$ 5,314,900**
Field Services Director	2,807,700	-	-	-	-	-	-
Field Engineering	783,400	-	-	-	-	-	-
Field Service Operations	1,556,100	6,552,200	5,214,200	5,238,600	5,263,500	5,289,000	5,314,900

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 6,552,200	$ 5,214,200	$(1,877,300)	-26.5%	$ 5,238,600	$ 5,263,500	$ 5,289,000	$ 5,314,900
3.1 Electric	-	-	-	N/A	-	-	-	-
3.2 Gas	-	-	-	N/A	-	-	-	-
3.3 Sewage Service	-	-	-	N/A	-	-	-	-
3.4 Water Service	-	-	-	N/A	-	-	-	-
4.1 Chemicals	-	-	-	N/A	-	-	-	-
4.2 Supplies & Other	849,700	402,700	(489,000)	-54.8%	388,100	373,700	359,100	359,100
4.3 Contractual Services	12,983,200	15,021,300	2,038,100	15.7%	15,251,700	15,482,100	15,712,700	15,716,900
5.1 Capital Program Allocation	(147,300)	(128,400)	41,600	-24.5%	(128,900)	(129,400)	(129,900)	(130,400)
5.2 Shared Services	-	(16,700)	(16,700)	N/A	(17,000)	(17,300)	(17,600)	(17,900)
6.0 Capital Outlay	-	-	-	N/A	-	-	-	-
Grand Total	$ 20,237,800	$ 20,493,100	$ (303,300)	-1.5%	$ 20,732,500	$ 20,972,600	$ 21,213,300	$ 21,242,600



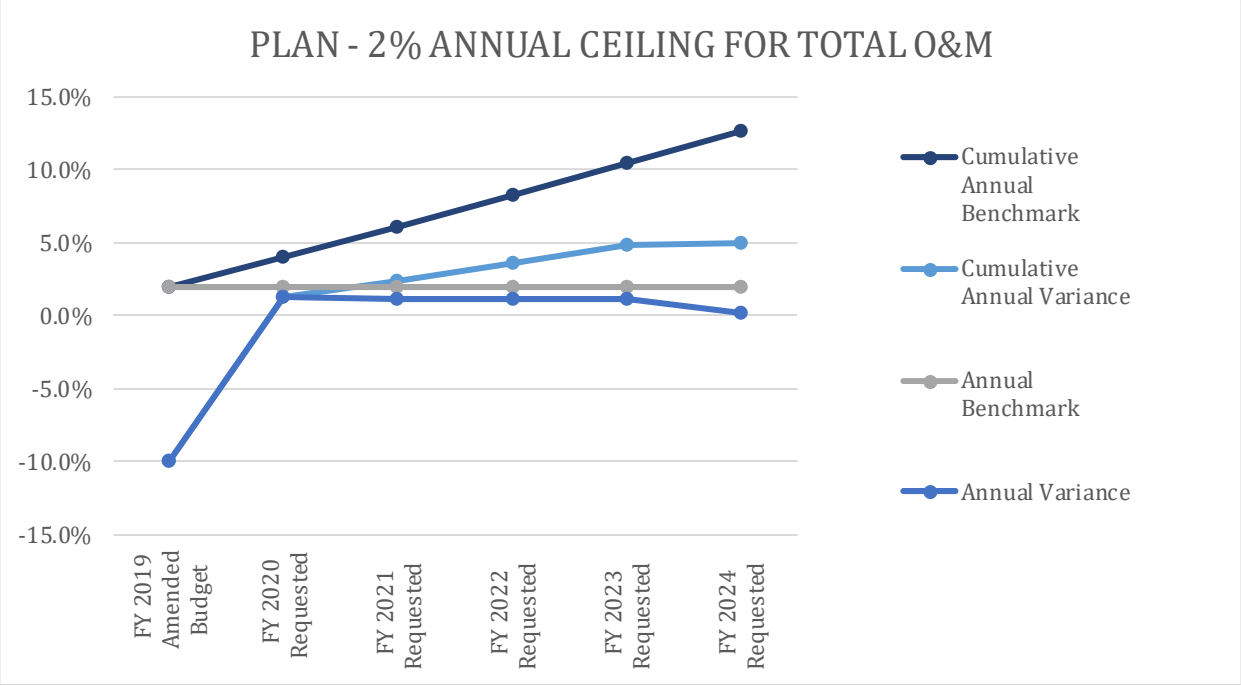
Five-Year Financial Plan by Team

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Field Engineering	$ -	$ -	$ (1,472,100)	-100.0%	$ -	$ -	$ -	$ -
Field Service Operations	20,237,800	20,493,100	6,858,400	50.3%	20,732,500	20,972,600	21,213,300	21,242,600
Field Services Director	-	-	(5,689,600)	-100.0%	-	-	-	-
Grand Total	$ 20,237,800	$ 20,493,100	$ (303,300)	-1.5%	$ 20,732,500	$ 20,972,600	$ 21,213,300	$ 21,242,600

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Field Service Operations Group's financial plan reflects a Five Year Overall increase of 5.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This increase is not unexpected given the consistency of these major initiatives. And while there is an increased expense in the short-term, it is believed that this is the result of stabilizing the staffing level and realigning the expenses to reflect existing contracts and upcoming projects. The stabilization and realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

"Open for 1.2019 Revised Draft"

Capital Outlay

[Currently not a component of this group]

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882401 - Field Services Director	**$4,993,400**	**$3,682,200**	**$5,689,600**	**$0**	**$0**	**$0**	**$0**	**$0**
2.1 Salaries & Wages	**1,420,300**	**1,170,400**	**1,229,400**	-	-	-	-	-
2.3 Overtime	**100,000**	**96,600**	**201,400**	-	-	-	-	-
2.4 Employee Benefits	**493,300**	**316,000**	**413,200**	-	-	-	-	-
2.5 Transition Services	**1,484,700**	**1,191,700**	**2,350,000**	-	-	-	-	-
4.2 Supplies & Other	**110,500**	**50,300**	**111,000**	-	-	-	-	-
Employee Uniform Expense	10,000	8,100	10,000	-	-	-	-	-
Memberships, Licenses & Subscriptions	5,000	1,800	3,000	-	-	-	-	-
Office Supplies	5,500	1,400	5,000	-	-	-	-	-
Operating Supplies	30,000	22,500	30,000	-	-	-	-	-
Training and Internal Meetings	50,000	12,700	50,000	-	-	-	-	-
Travel	10,000	2,800	10,000	-	-	-	-	-
Tuition Refund	-	1,000	3,000	-	-	-	-	-
4.3 Contractual Services	**1,400,000**	**857,200**	**1,400,000**	-	-	-	-	-
5.1 Capital Program Allocation	**(15,400)**	-	**(15,400)**	-	-	-	-	-
882411 - Field Engineering	**1,378,800**	**899,100**	**1,472,100**	-	-	-	-	-
2.1 Salaries & Wages	**897,700**	**493,900**	**810,200**	-	-	-	-	-
2.3 Overtime	**125,000**	**87,800**	**150,000**	-	-	-	-	-
2.4 Employee Benefits	**334,500**	**191,300**	**293,300**	-	-	-	-	-
2.5 Transition Services	-	**10,900**	-	-	-	-	-	-
2.6 Personnel Transition Adjustment	**(145,000)**	-	-	-	-	-	-	-
4.2 Supplies & Other	**62,000**	**21,800**	**94,100**	-	-	-	-	-
Employee Uniform Expense	2,000	1,200	5,000	-	-	-	-	-
Inspection and Permit Fees	11,000	2,000	11,000	-	-	-	-	-
Memberships, Licenses & Subscriptions	8,500	-	32,600	-	-	-	-	-
Mileage and Parking	10,000	7,700	15,000	-	-	-	-	-
Office Supplies	5,500	1,200	4,000	-	-	-	-	-
Operating Supplies	15,000	8,800	21,500	-	-	-	-	-
Travel	10,000	900	5,000	-	-	-	-	-
4.3 Contractual Services	**150,000**	**126,000**	**169,900**	-	-	-	-	-
5.1 Capital Program Allocation	**(45,400)**	**(65,900)**	**(45,400)**	-	-	-	-	-
5.2 Shared Services	-	**33,300**	-	-	-	-	-	-
Shared Services : Salaries & Wages Reimb	-	23,800	-	-	-	-	-	-
Shared Services: Employee Benefit Reimb	-	9,500	-	-	-	-	-	-
882431 - Field Service Operations	**16,102,500**	**11,989,700**	**13,634,700**	**20,493,100**	**20,732,500**	**20,972,600**	**21,213,300**	**21,242,600**
2.1 Salaries & Wages	**1,338,300**	**895,900**	**1,027,500**	**3,561,900**	**3,561,900**	**3,561,900**	**3,561,900**	**3,561,900**
2.3 Overtime	**600,000**	**138,400**	**192,000**	**431,000**	**431,000**	**431,000**	**431,000**	**431,000**
2.4 Employee Benefits	**521,800**	**464,200**	**424,500**	**1,221,300**	**1,245,700**	**1,270,600**	**1,296,100**	**1,322,000**
2.5 Transition Services	-	-	-	-	-	-	-	-
2.6 Personnel Transition Adjustment	**(157,000)**	-	-	-	-	-	-	-
4.2 Supplies & Other	**1,188,600**	**148,400**	**686,600**	**402,700**	**388,100**	**373,700**	**359,100**	**359,100**
Employee Uniform Expense	4,000	2,600	25,000	27,500	27,500	27,500	27,500	27,500
Inspection and Permit Fees	8,300	200	7,600	12,700	12,700	12,700	12,700	12,700
Memberships, Licenses & Subscriptions	800	-	1,000	20,300	20,300	20,400	20,400	20,400
Mileage and Parking	500	-	1,000	8,000	8,000	8,100	8,100	8,100
Office Supplies	20,000	4,900	7,000	11,500	11,500	11,500	11,500	11,500
Operating Supplies	1,000,000	141,100	500,000	237,200	222,600	208,000	193,400	193,400
Rentals-Miscellaneous	55,000	-	45,000	20,000	20,000	20,000	20,000	20,000
Repairs & Maintenance-Equipment	100,000	(400)	100,000	-	-	-	-	-
Training and Internal Meetings	-	-	-	50,000	50,000	50,000	50,000	50,000
Travel	-	-	-	12,500	12,500	12,500	12,500	12,500
Tuition Refund	-	-	-	3,000	3,000	3,000	3,000	3,000
4.3 Contractual Services	**12,720,000**	**10,342,800**	**11,413,300**	**15,021,300**	**15,251,700**	**15,482,100**	**15,712,700**	**15,716,900**
5.1 Capital Program Allocation	**(109,200)**	-	**(109,200)**	**(128,400)**	**(128,900)**	**(129,400)**	**(129,900)**	**(130,400)**
5.2 Shared Services	-	-	-	**(16,700)**	**(17,000)**	**(17,300)**	**(17,600)**	**(17,900)**
Shared Services : Salaries & Wages Reimb	-	-	-	(10,600)	(10,800)	(11,000)	(11,200)	(11,400)
Shared Services Reimbursement	-	-	-	(1,800)	(1,800)	(1,800)	(1,800)	(1,800)
Shared Services: Employee Benefit Reimb	-	-	-	(4,300)	(4,400)	(4,500)	(4,600)	(4,700)
6.0 Capital Outlay	-	-	-	-	-	-	-	-
Grand Total	**$ 22,474,700**	**$ 16,571,000**	**$ 20,796,400**	**$ 20,493,100**	**$ 20,732,500**	**$ 20,972,600**	**$ 21,213,300**	**$ 21,242,600**

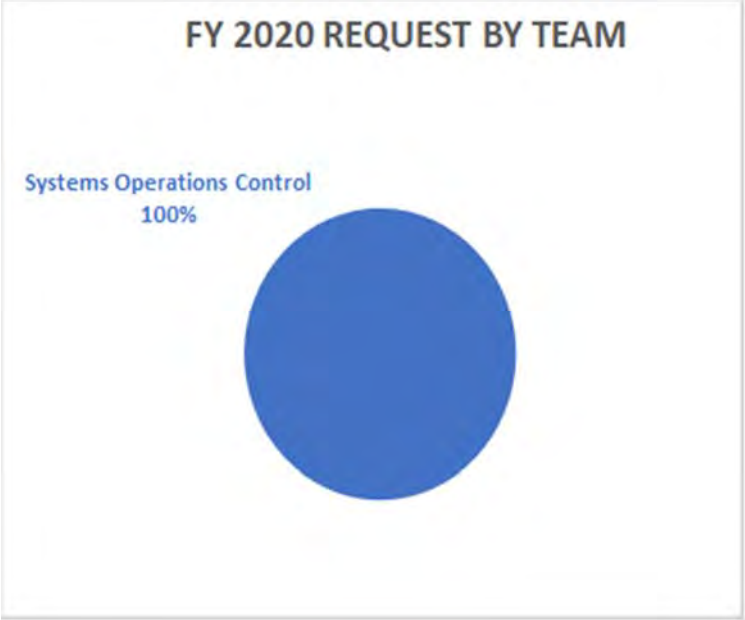
Highlights

The Systems Control Area strategic initiatives include:

- **Control Systems Enhancement**
  Drive the use of Ovation (distributed control system) and OSIsoft PI (application software for real-time data infrastructure solutions called process information) systems for technology enhancement and analytics
- **Operational Efficiency**
  Improve operational efficiency, maintain regulatory and environmental compliance, and accommodate future systems expansion.
  Implement real-time pump curves at all booster stations for pump efficiency monitoring.

Organization

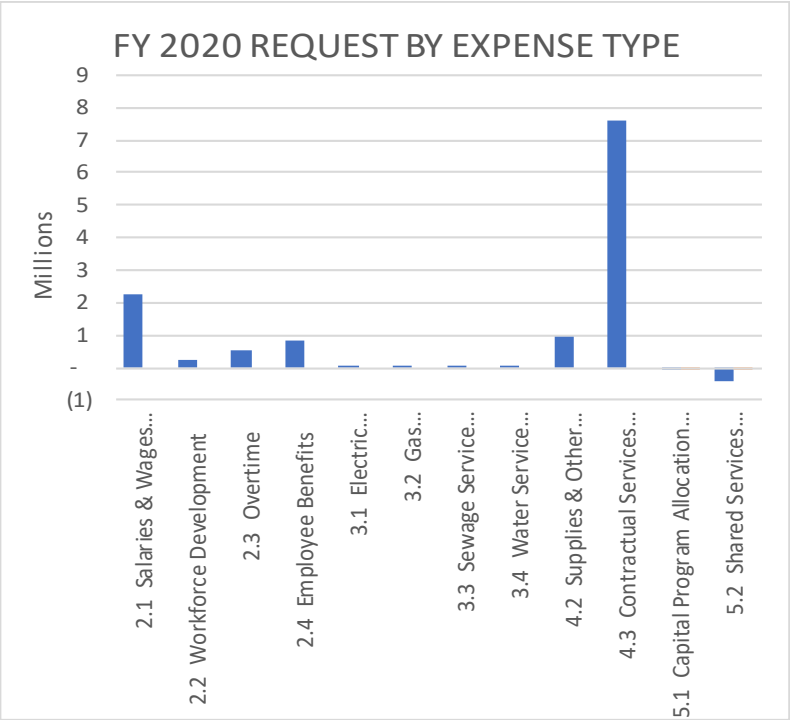
The GLWA Systems Control Area operates the water transmission system by controlling & monitoring the distribution of water throughout the Regional Water System. The treatment and distribution system is controlled by an award-winning state of the arts Supervisory Control and Data Acquisition (SCADA) system. Operators remotely control the many pumps and valves that allow the system to deliver water to all communities. Access to real-time data from throughout the system allows quicker response, reaction, detection and isolation of system leaks and rapidly changing conditions such as storm water inflow.



Expense Categories

There are two major categories of Systems Control expenses in the Operations and Maintenance Budget as listed below.

- Contractual Services
- Salaries & Wages



Contractual Services is the highest expense category for Systems Control. Contractual services are heavily utilized in the Systems Control group to perform various maintenance, monitoring and evaluations of the distribution systems to maintain operational readiness.

The Systems Control Area is required to obtain a consistent level of personnel which is the result of staff restructuring on the basis of continuous improvement and workload balancing for efficiency. Accordingly, salaries & wages is the second highest expense category.

Biennial Budget Request

The biennial reflects an overall decrease in FY 2020 as a result of a restructuring between Field Service Operations and Systems Control. The water booster stations and sewer lift stations portion of the Lakeshore Global Corporation contract was transferred from Systems Control to Field Service Operations which decreased contractual services by $1.8 million. A combination of other contractual services decreased by $1 million which includes the labor, material and maintenance for electrical switchgear and power transformers contract.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	4,460,300	5,559,600	3,967,700	3,824,200	(143,500)	-3.6%	3,840,700
3.1 Electric	60,000	60,700	50,000	51,000	1,000	2.0%	52,000
3.2 Gas	36,000	100	25,000	10,100	(14,900)	-59.6%	10,200
3.3 Sewage Service	8,000	9,800	17,000	16,000	(1,000)	-5.9%	16,000
3.4 Water Service	5,000	500	5,000	1,000	(4,000)	-80.0%	1,000
4.2 Supplies & Other	1,173,800	872,500	949,100	945,800	(3,300)	-0.3%	954,900
4.3 Contractual Services	7,014,000	5,902,200	10,309,000	7,603,100	(2,705,900)	-26.2%	7,629,300
5.1 Capital Program Allocation	(71,400)	(59,400)	(71,400)	(82,300)	(10,900)	15.3%	(82,600)
5.2 Shared Services	(993,600)	(669,400)	(993,600)	(429,200)	564,400	-56.8%	(437,800)
6.0 Capital Outlay	-	71,500	40,000	-	(40,000)	-100.0%	-
Grand Total	$ 11,692,100	$ 11,748,100	$ 14,297,800	$ 11,939,700	$ (2,358,100)	-16.5%	$ 11,983,700

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Systems Operations Control	11,692,100	11,748,100	14,297,800	11,939,700	(2,358,100)	-16.5%	11,983,700
Grand Total	$ 11,692,100	$ 11,748,100	$ 14,297,800	$ 11,939,700	$ (2,358,100)	-16.5%	$ 11,983,700

Personnel Budget

Systems Control personnel consists of 43 positions for FY 2020. During FY 2018, thirty-four (34) staffing and contract positions were transferred to Field Service Operations and two (2) staffing positions were transferred to other water operating areas. Systems Control is largely comprised of technicians that operate and maintain instrumentation equipment in the water and wastewater operations, field services, pumping stations, electrical systems, computerized process controls, and equipment.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Systems Control	79.00	43.00	43.00	43.00	43.00	43.00	43.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Systems Control	79.00	43.00	43.00	43.00	43.00	43.00	43.00

Personnel Budget - The table below presents the Water Operations personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

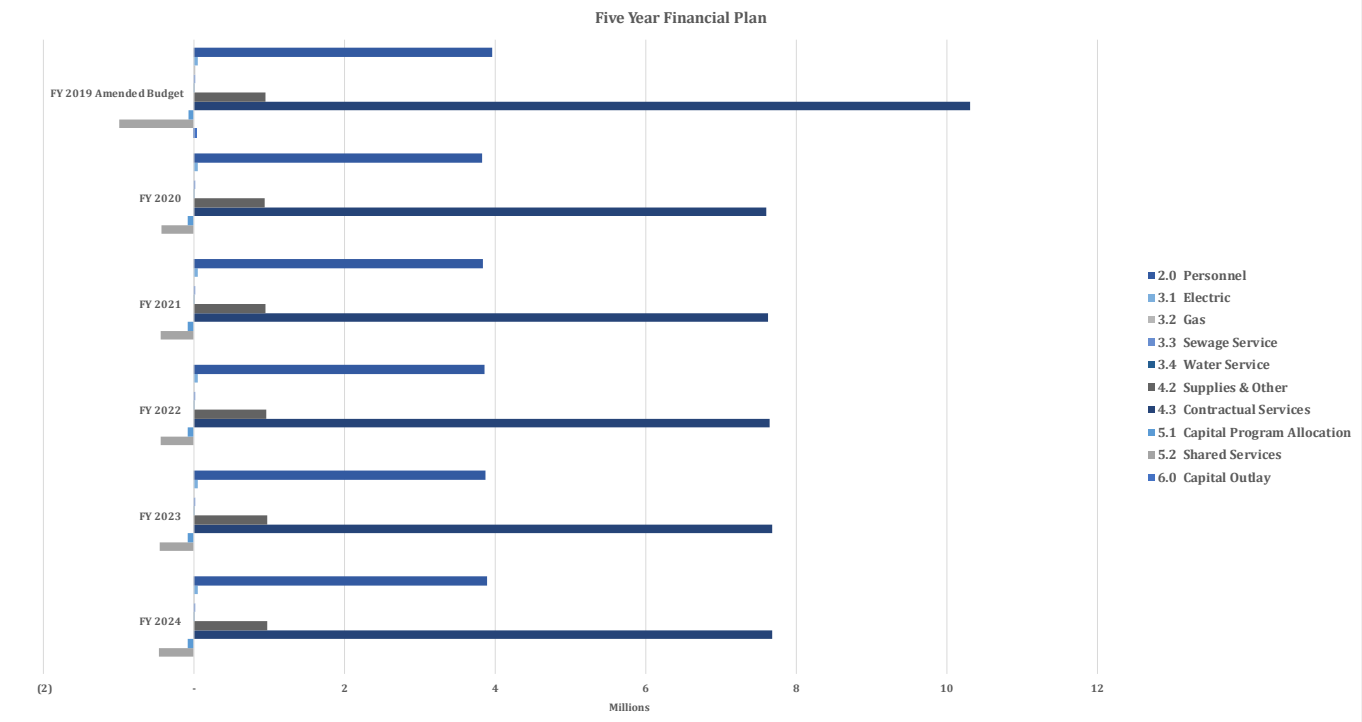
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2018 Approved Budget	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Systems Control	$ 5,160,300	$ 4,142,700	$ 3,824,200	$ 3,840,700	$ 3,857,600	$ 3,874,800	$ 3,892,400

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 3,967,700	$ 3,824,200	$ (143,500)	-3.6%	$ 3,840,700	$ 3,857,600	$ 3,874,800	$ 3,892,400
3.1 Electric	50,000	51,000	1,000	2.0%	52,000	53,000	54,000	54,000
3.2 Gas	25,000	10,100	(14,900)	-59.6%	10,200	10,300	10,400	10,400
3.3 Sewage Service	17,000	16,000	(1,000)	-5.9%	16,000	16,000	16,000	16,000
3.4 Water Service	5,000	1,000	(4,000)	-80.0%	1,000	1,000	1,000	1,000
4.2 Supplies & Other	949,100	945,800	(3,300)	-0.3%	954,900	964,300	973,400	973,400
4.3 Contractual Services	10,309,000	7,603,100	(2,705,900)	-26.2%	7,629,300	7,655,400	7,681,600	7,681,600
5.1 Capital Program Allocation	(71,400)	(82,300)	(10,900)	15.3%	(82,600)	(83,000)	(83,300)	(83,600)
5.2 Shared Services	(993,600)	(429,200)	564,400	-56.8%	(437,800)	(446,600)	(455,500)	(464,600)
6.0 Capital Outlay	40,000	-	(40,000)	-100.0%	-	-	-	-
Grand Total	$ 14,297,800	$ 11,939,700	$(2,358,100)	-16.5%	$ 11,983,700	$ 12,028,000	$ 12,072,400	$ 12,080,600



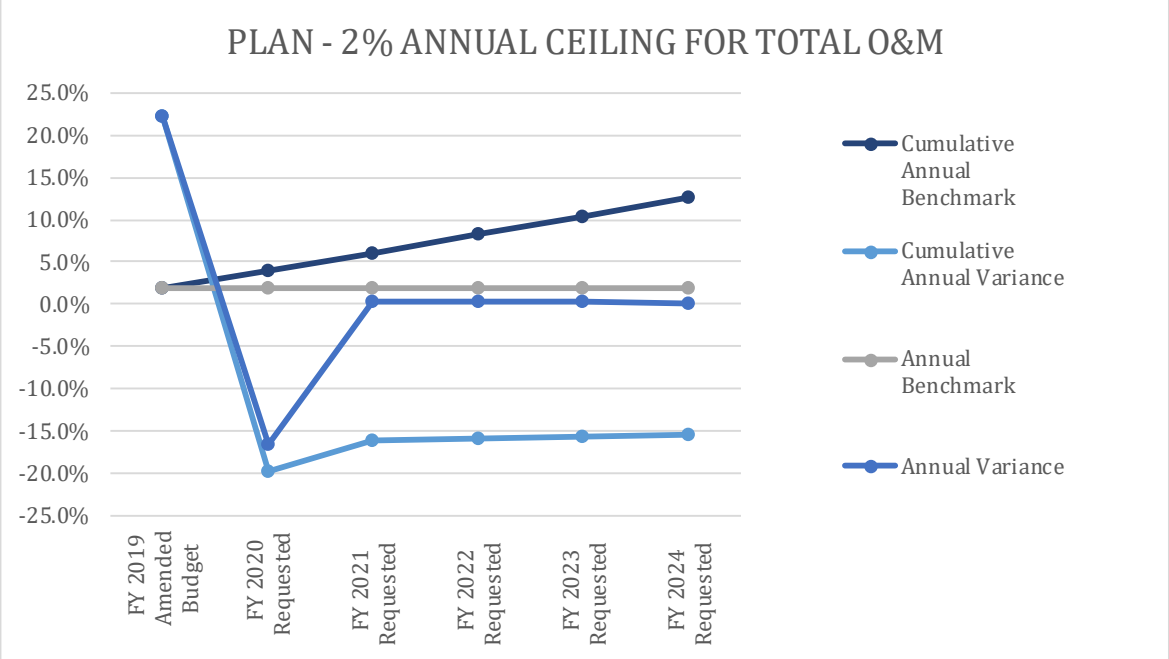
Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Systems Operations Control	$ 14,297,800	$ 11,939,700	$ (2,358,100)	-16.5%	$ 11,983,700	$ 12,028,000	$ 12,072,400	$ 12,080,600
Grand Total	$ 14,297,800	$ 11,939,700	$ (2,358,100)	-16.5%	$ 11,983,700	$ 12,028,000	$ 12,072,400	$ 12,080,600

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Systems Control Group's financial plan reflects a Five Year Overall decrease of 15.5% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This decrease is not unexpected given the consistency of these major initiatives. And while there is a decreased expense in the short-term, it is believed that this is the result of stabilizing the staffing level and realigning the expenses to reflect existing contracts and upcoming projects. The stabilization and realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

"Open for 1.2019 Revised Draft"

Capital Outlay

Systems Control capital outlay is funded by the Improvement & Extension (I&E) budget.

Capital Outlay	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
Systems Operations Control	**$ 2,750,000**	**$ 2,950,000**	**$ 2,500,000**	**$ 2,950,000**	**$ 2,750,000**
Control System Upgrades and Integration	250,000	250,000	-	250,000	250,000
Instrumentation and Control System Upgrades and Integration	250,000	250,000	250,000	250,000	250,000
Motor/Pump Replacement/Rehabilitation	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Process Control Software	75,000	75,000	75,000	75,000	75,000
UPS (Uninterrupted Power Supply)	-	200,000	-	200,000	-
Valve Replacement/Rehabilitation	300,000	300,000	300,000	300,000	300,000
Variable Frequency Drive Parts and Software Upgrades	300,000	300,000	300,000	300,000	300,000
Vibration Equipment	75,000	75,000	75,000	75,000	75,000
Grand Total	**$ 2,750,000**	**$ 2,950,000**	**$ 2,500,000**	**$ 2,950,000**	**$ 2,750,000**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
882301 - Systems Operations Control	**$ 11,692,100**	**$ 11,732,200**	**$ 14,297,800**	**$ 11,939,700**	**$ 11,983,700**	**$ 12,028,000**	**$ 12,072,400**	**$ 12,080,600**
2.1 Salaries & Wages	**2,288,100**	**2,271,700**	**1,945,300**	**2,230,800**	**2,230,800**	**2,230,800**	**2,230,800**	**2,230,800**
2.2 Workforce Development	**150,400**	**164,800**	**195,200**	**231,900**	**231,900**	**231,900**	**231,900**	**231,900**
2.3 Overtime	**600,000**	**686,700**	**533,600**	**533,600**	**533,600**	**533,600**	**533,600**	**533,600**
2.4 Employee Benefits	**860,000**	**877,900**	**808,600**	**827,900**	**844,400**	**861,300**	**878,500**	**896,100**
2.5 Transition Services	**1,261,800**	**1,558,500**	**660,000**	-	-	-	-	-
2.6 Personnel Transition Adjustment	**(700,000)**	-	**(175,000)**	-	-	-	-	-
3.1 Electric	**60,000**	**60,700**	**50,000**	**51,000**	**52,000**	**53,000**	**54,000**	**54,000**
3.2 Gas	**36,000**	**100**	**25,000**	**10,100**	**10,200**	**10,300**	**10,400**	**10,400**
3.3 Sewage Service	**8,000**	**9,800**	**17,000**	**16,000**	**16,000**	**16,000**	**16,000**	**16,000**
3.4 Water Service	**5,000**	**500**	**5,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
4.2 Supplies & Other	**1,173,800**	**872,500**	**949,100**	**945,800**	**954,900**	**964,300**	**973,400**	**973,400**
Capital Outlay less than $5,000	135,000	135,700	100,000	102,000	104,000	106,000	108,000	108,000
Employee Uniform Expense	30,000	21,600	25,000	25,500	26,000	26,500	27,000	27,000
Inspection and Permit Fees	3,000	600	3,000	2,000	2,000	2,100	2,100	2,100
Memberships, Licenses & Subscriptions	20,000	10,400	12,000	12,200	12,500	12,700	13,000	13,000
Mileage and Parking	5,000	4,200	5,000	5,100	5,200	5,300	5,400	5,400
Office Supplies	20,000	13,900	15,100	15,400	15,700	16,000	16,300	16,300
Operating Supplies	275,000	190,700	278,000	210,100	210,700	211,300	211,900	211,900
Operating Supplies-Janitorial	4,000	2,200	3,000	3,100	3,100	3,200	3,200	3,200
Property Taxes	5,000	1,100	10,000	10,200	10,400	10,600	10,800	10,800
Rentals- Office Equipment	-	-	-	-	-	-	-	-
Rentals-Buildings	69,100	39,400	44,600	41,100	41,100	41,200	41,200	41,200
Repairs & Maintenance-Equipment	405,700	218,700	250,400	253,600	257,200	260,800	264,400	264,400
Repairs & Maintenance-Hardware	35,000	91,000	35,000	110,000	110,000	110,000	110,000	110,000
Repairs & Maintenance-Software	130,000	118,100	136,000	123,900	124,800	125,800	126,700	126,700
Training and Internal Meetings	25,000	14,800	20,000	20,400	20,800	21,200	21,600	21,600
Travel	10,000	9,300	10,000	10,200	10,400	10,600	10,800	10,800
Tuition Refund	2,000	800	2,000	1,000	1,000	1,000	1,000	1,000
4.3 Contractual Services	**7,014,000**	**5,902,200**	**10,309,000**	**7,603,100**	**7,629,300**	**7,655,400**	**7,681,600**	**7,681,600**
Contractual Buildings & Grounds Maint	169,000	189,500	152,000	202,000	202,100	202,100	202,200	202,200
Contractual Operating Services	1,674,700	1,600,400	6,657,000	2,765,900	2,766,800	2,767,700	2,768,600	2,768,600
Contractual Professional Services	5,170,300	4,112,300	3,500,000	4,635,200	4,660,400	4,685,600	4,710,800	4,710,800
5.1 Capital Program Allocation	**(71,400)**	**(59,400)**	**(71,400)**	**(82,300)**	**(82,600)**	**(83,000)**	**(83,300)**	**(83,600)**
Capital Program: Employee Benefits	(29,600)	(16,900)	(29,600)	(23,000)	(23,100)	(23,200)	(23,300)	(23,400)
Capital Program: Salaries & Wages-Direct	(41,800)	(42,500)	(41,800)	(59,300)	(59,500)	(59,800)	(60,000)	(60,200)
5.2 Shared Services	**(993,600)**	**(669,400)**	**(993,600)**	**(429,200)**	**(437,800)**	**(446,600)**	**(455,500)**	**(464,600)**
Shared Services : Salaries & Wages Reimb	(360,000)	(187,400)	(360,000)	(135,500)	(138,200)	(141,000)	(143,800)	(146,700)
Shared Services Reimbursement	(633,600)	(429,300)	(633,600)	(239,600)	(244,400)	(249,300)	(254,300)	(259,400)
Shared Services: Employee Benefit Reimb	-	(52,700)	-	(54,100)	(55,200)	(56,300)	(57,400)	(58,500)
6.0 Capital Outlay	-	**55,600**	**40,000**	-	-	-	-	-
Grand Total	**$ 11,692,100**	**$ 11,732,200**	**$ 14,297,800**	**$ 11,939,700**	**$ 11,983,700**	**$ 12,028,000**	**$ 12,072,400**	**$ 12,080,600**

Initiatives

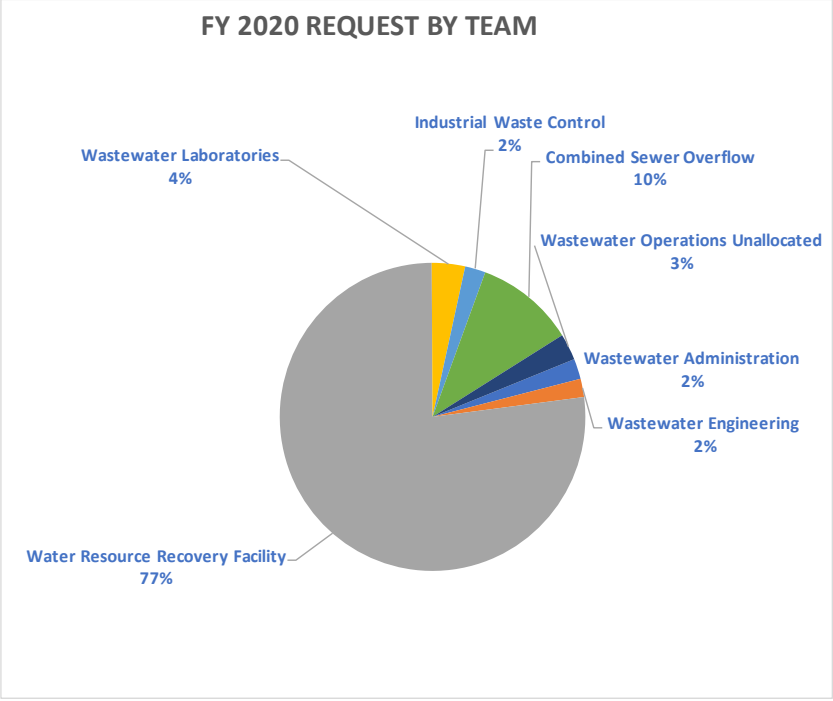
The Wastewater Operating Group pursues various initiatives including:

- **Safeguarding the publics' health and the environment through compliance with the National Pollution Discharge Elimination System (NPDES).**
- **Monitor and improve the reliability of processing equipment by focusing on preventative and corrective maintenance programs.**
- **Continue to build a reliable workforce in accordance with the Michigan Department of Environmental Quality (MDEQ) staffing plan through the recruitment of talented individuals and implementation of apprenticeship programs.**
- **Optimize chemical and utility usage through real time monitoring systems and process upgrades.**
- **Continue investment in the wastewater infrastructure to replace or upgrade assets which have exceeded their useful life.**
- **Continue efforts towards innovation by working with the Research and Innovation Group to explore opportunities to partner with universities to conduct research at the Water Resource Recovery Facility (WRRF).**

Organization

The GLWA Wastewater Operations Area consists of five teams.

- **Wastewater Administration -** Overall budget management including unallocated reserve
- **Water Resource Recovery Facility (WRRF) –** processing plant for the treatment of sewage for the greater metropolitan area
- **Wastewater Engineering –** provide Design, Construction and administration services for improvements to the WRRF and CSO facilities.
- **Wastewater Laboratories –** monitoring of pollutants entering GLWA sewage facilities

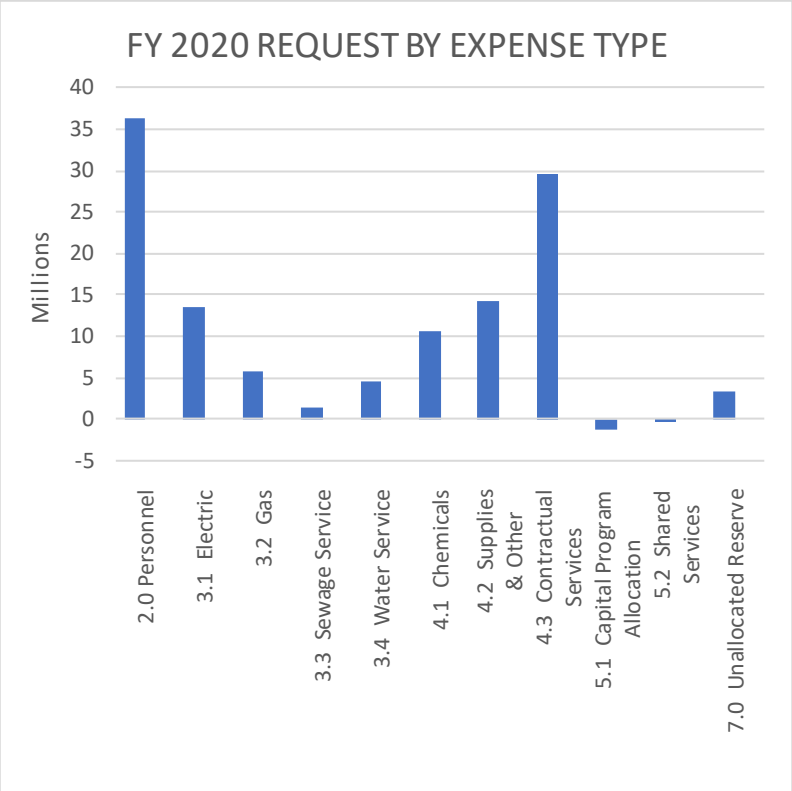


- **Industrial Waste Control** – identification and monitoring of industrial users for pollutants.
- **Combined Sewer Overflow** (CSO) – facilities utilized to control flow volumes for protecting the system and the receiving waters during increased system demand such as during rain storms or snow melt.
- **Wastewater Systems Unallocated** – Funds not apportioned for a specific purpose used for significant unexpected or unbudgeted expenditures.

Expense Categories

There are two major categories for Wastewater Operating Group. The expenses in the Operations and Maintenance Budget are listed below.

- Personnel Costs
- Contractual Services



In addition to the strategic initiatives noted above, the Wastewater Operations Group is tasked with the handling and disposal of the solids separated through the treatment process. The disposal of these materials make up the majority of contractual services expenditures.

As part of the disposal expenditures in 2016 the Bio-dryer Facility (BDF), operated by the New England Fertilizer Company, was commissioned. The new facility greatly reducing the volume of solid waste incinerated or sent to landfill by processing the product into a renewable resource (fertilizer). Over the past year approximately 65% of the biological waste has been processed by the BDF.

Reliability of processing equipment is of primary concern for GLWA. As part of this effort the Administration of the Wastewater Operating Group has continued to focus on reinforcing a proactive maintenance program.

Biennial Budget Request

The biennial budget reflects an increase in FY 2020 as a result of the ramp up of the strategic initiatives defined above.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	37,302,000	35,353,900	35,145,000	36,219,200	1,074,200	3.1%	36,096,000
3.1 Electric	13,196,300	13,195,700	13,246,600	13,491,400	244,800	1.8%	13,722,300
3.2 Gas	5,701,200	5,657,500	5,694,300	5,844,600	150,300	2.6%	5,950,400
3.3 Sewage Service	1,255,800	1,254,900	1,783,700	1,380,200	(403,500)	-22.6%	1,391,900
3.4 Water Service	4,472,700	4,463,600	5,652,400	4,666,700	(985,700)	-17.4%	4,750,400
4.1 Chemicals	8,142,300	8,073,000	10,946,800	10,523,900	(422,900)	-3.9%	10,808,600
4.2 Supplies & Other	15,143,900	12,511,100	13,248,800	14,288,600	1,039,800	7.8%	13,746,800
4.3 Contractual Services	35,679,900	28,069,600	27,755,500	29,472,900	1,717,400	6.2%	31,099,500
5.1 Capital Program Allocation	(890,800)	(969,600)	(921,500)	(1,239,400)	(317,900)	34.5%	(1,244,900)
5.2 Shared Services	(209,300)	(209,700)	(6,400)	(154,300)	(147,900)	2310.9%	(157,400)
7.0 Unallocated Reserve	1,161,500	-	2,440,500	3,264,900	824,400	33.8%	3,976,300
Grand Total	$ 120,955,500	$ 107,400,000	$ 114,985,700	$ 117,758,700	$ 2,773,000	2.4%	$ 120,139,900

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Wastewater Administration	1,700	400	1,688,300	2,511,100	822,800	48.7%	2,538,200
Water Resource Recovery Facility	100,586,500	91,159,200	87,693,700	90,641,400	2,947,700	3.4%	92,640,200
Wastewater Engineering	3,014,300	2,537,900	2,572,700	2,262,000	(310,700)	-12.1%	1,965,300
Industrial Waste Control	5,552,500	5,291,700	2,917,300	2,559,100	(358,200)	-12.3%	2,595,700
Wastewater Laboratories	978,100	902,800	3,761,200	4,148,900	387,700	10.3%	3,812,000
Combined Sewer Overflow	9,660,900	7,508,000	13,912,000	12,371,300	(1,540,700)	-11.1%	12,612,200
Wastewater Operations Unallocated	1,161,500	-	2,440,500	3,264,900	824,400	33.8%	3,976,300
Grand Total	$ 120,955,500	$ 107,400,000	$ 114,985,700	$ 117,758,700	$ 2,773,000	2.4%	$ 120,139,900

Personnel Budget

Wastewater Operations Group personnel expense is largely comprised of wastewater operations staffing of 440 positions. The WRRF staffing plan target is agreed upon with the Michigan Department of Environmental Quality.

The tables on the following page provide three alternate views of the staffing plan.

1. *Staffing Plan- Number of Positions* – The table on the following page presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan

	Prior Years	Current Year	Biennial Budget		Forecast		
Team	**FY 2018 Staffing Plan**	**FY 2019 Staffing Plan**	**FY 2020 Staffing Plan**	**FY 2021 Staffing Plan**	**FY 2022 Staffing Plan**	**FY 2023 Staffing Plan**	**FY 2024 Staffing Plan**
Wastewater Administration	18.00	14.00	14.00	14.00	14.00	14.00	14.00
Water Resouce Recovery Facility	312.00	304.00	299.00	299.00	299.00	299.00	299.00
Wastewater Engineering	32.00	26.00	24.00	24.00	24.00	24.00	24.00
Wastewater Laboratories	25.00	33.00	38.00	38.00	38.00	38.00	38.00
Industrial Waste Control	31.00	30.00	29.00	29.00	29.00	29.00	29.00
Combined Sewer Overflow	18.00	33.00	36.00	36.00	36.00	36.00	36.00
Grand Total	**436.00**	**440.00**	**440.00**	**440.00**	**440.00**	**440.00**	**440.00**

2. *Full Time Equivalents* - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full Time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	**FY 2018 Approved FTEs**	**FY 2019 Approved FTEs**	**FY 2020 Requested FTEs**	**FY 2021 Requested FTEs**	**FY 2022 Requested FTEs**	**FY 2023 Requested FTEs**	**FY 2024 Requested FTEs**
Wastewater Administration	18.00	14.00	14.00	14.00	14.00	14.00	14.00
Water Resouce Recovery Facility	308.50	299.50	294.00	299.00	299.00	299.00	299.00
Wastewater Engineering	32.00	26.00	24.00	24.00	24.00	24.00	24.00
Wastewater Laboratories	25.00	33.00	38.00	38.00	38.00	38.00	38.00
Industrial Waste Control	31.00	30.00	29.00	29.00	29.00	29.00	29.00
Combined Sewer Overflow	18.00	32.00	34.25	35.25	35.50	35.50	35.50
Grand Total	432.50	434.50	433.25	439.25	439.50	439.50	439.50

3. *Personnel Budget* – The table below presents the Wastewater Operations Group personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits and Contractual Transition Services. These values are based on the *Full Time Equivalents* in table 2.

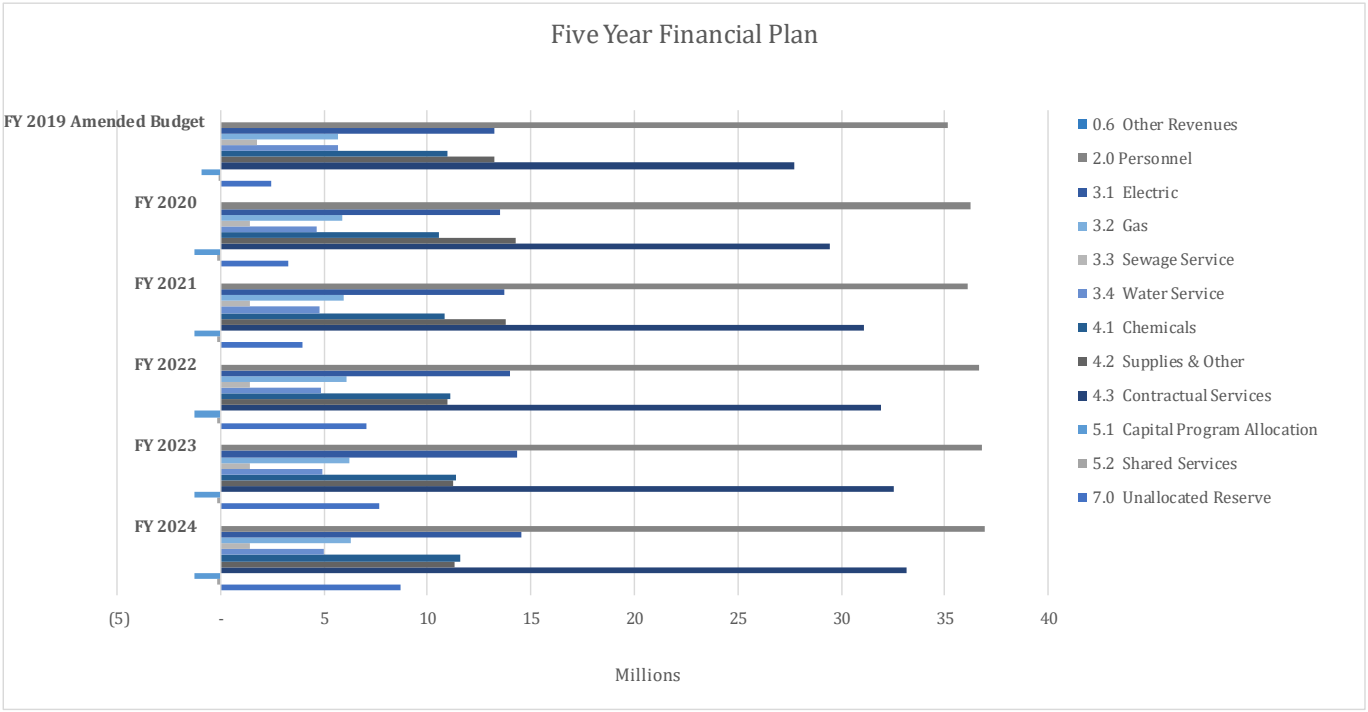
Personnel Budget

Expense Category	**FY 2017 Amended Budget**	**FY 2018 Amended Budget**	**FY 2019 Amended Budget**	**FY 2020 Department Requested**	**FY 2021 Department Requested**	**FY 2022 Department Requested**	**FY 2023 Department Requested**	**FY 2024 Department Requested**
Wastewater Administration	**0**	**1700**	**1,688,300**	**1,530,800**	**1,536,900**	**1,543,100**	**1,549,200**	**1,555,300**
Water Resource Recovery Facility	**$ 23,925,900**	**$ 27,058,200**	**$ 23,493,200**	**$ 23,864,900**	**$ 23,560,400**	**$ 24,017,600**	**$24,098,600**	**$ 24,229,400**
Wastewater Engineering	**2,800,900**	**2,514,600**	**2,260,400**	**2,216,700**	**2,226,700**	**2,236,800**	**2,246,900**	**2,256,900**
Industrial Waste Control	**5,043,000**	**4,824,700**	**2,362,500**	**2,077,900**	**2,088,200**	**2,098,500**	**2,108,900**	**2,119,200**
Wastewater Laboratories	**-**	**11,000**	**2,672,000**	**3,349,600**	**3,365,000**	**3,380,500**	**3,395,900**	**3,411,400**
Combined Sewer Overflow	**2,007,500**	**2,891,800**	**2,668,600**	**3,179,300**	**3,318,800**	**3,361,400**	**3,373,500**	**3,385,500**
Grand Total	**$ 33,777,300**	**$ 37,302,000**	**$ 35,145,000**	**$ 36,219,200**	**$ 36,096,000**	**$ 36,637,900**	**$36,773,000**	**$ 36,957,700**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Cost Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.1 Salaries & Wages	$ 20,924,200	$ 21,131,900	$ 207,700	1.0%	$ 21,718,900	$ 22,221,700	$ 22,221,700	$ 22,221,700
2.2 Workforce Development	196,000	386,100	190,100	97.0%	386,100	386,100	386,100	386,100
2.3 Overtime	3,521,200	3,043,400	(477,800)	-13.6%	3,146,000	3,172,700	3,172,700	3,172,700
2.4 Employee Benefits	7,865,900	7,858,700	(7,200)	-0.1%	8,266,300	8,563,900	8,699,000	8,883,700
2.5 Transition Services	4,213,400	3,799,100	(414,300)	-9.8%	2,578,700	2,293,500	2,293,500	2,293,500
2.6 Personnel Transition Adjustment	(1,575,700)	-	1,575,700	-100.0%	-	-	-	-
3.1 Electric	13,246,600	13,491,400	244,800	1.8%	13,722,300	13,964,200	14,310,600	14,557,100
3.2 Gas	5,694,300	5,844,600	150,300	2.6%	5,950,400	6,071,900	6,196,000	6,323,000
3.3 Sewage Service	1,783,700	1,380,200	(403,500)	-22.6%	1,391,900	1,404,600	1,419,700	1,432,200
3.4 Water Service	5,652,400	4,666,700	(985,700)	-17.4%	4,750,400	4,837,700	4,927,300	5,016,100
4.1 Chemicals	10,946,800	10,523,900	(422,900)	-3.9%	10,808,600	11,072,700	11,387,600	11,611,700
4.2 Supplies & Other	13,248,800	14,288,600	1,039,800	7.8%	13,746,800	10,997,200	11,270,600	11,322,600
4.3 Contractual Services	27,755,500	29,472,900	1,717,400	6.2%	31,099,500	31,943,300	32,550,900	33,145,700
5.1 Capital Program Allocation	(921,500)	(1,239,400)	(317,900)	34.5%	(1,244,900)	(1,250,400)	(1,256,000)	(1,261,500)
5.2 Shared Services	(6,400)	(154,300)	(147,900)	2310.9%	(157,400)	(160,500)	(168,100)	(191,600)
7.0 Unallocated Reserve	2,440,500	3,264,900	824,400	33.8%	3,976,300	7,050,800	7,636,600	8,696,600
Grand Total	$114,985,700	$ 117,758,700	$ 2,773,000	2.4%	$ 120,139,900	$ 122,569,400	$ 125,048,200	$ 127,609,600



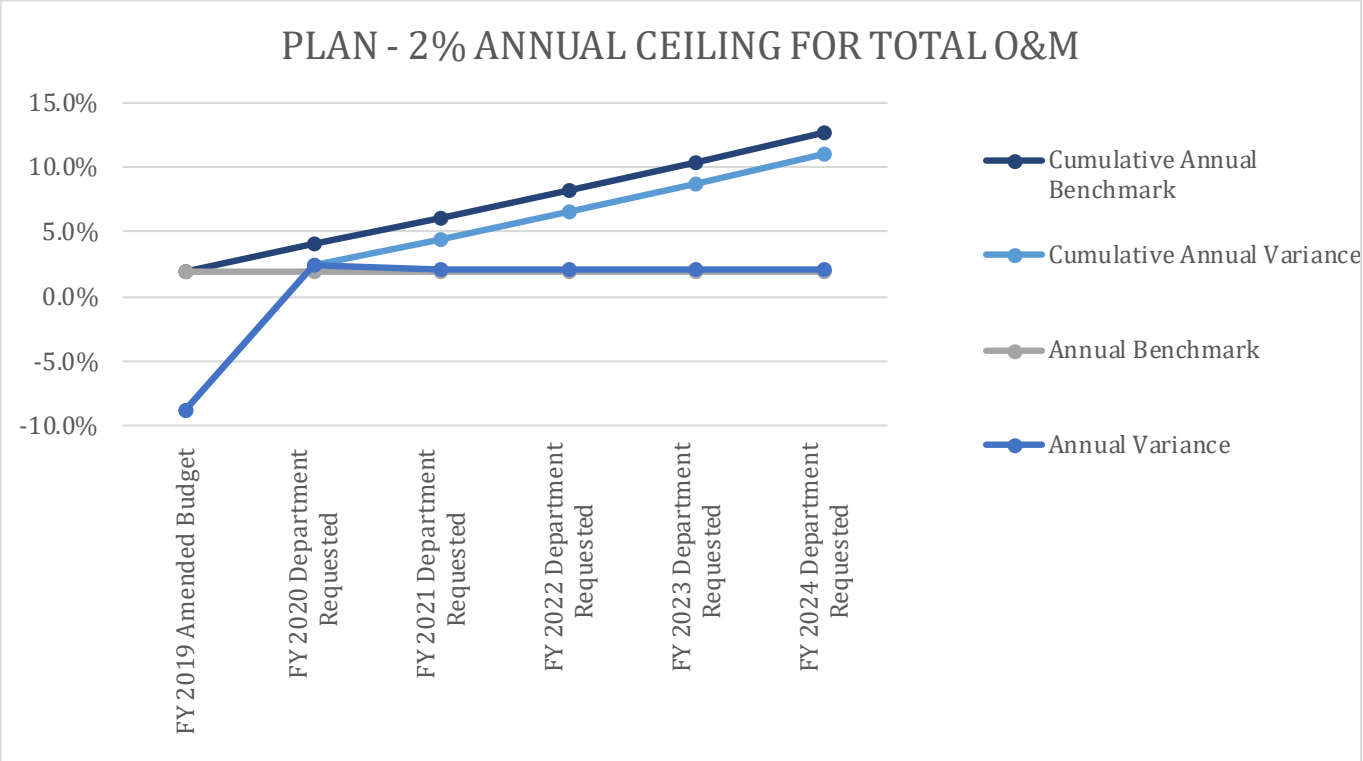
Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Wastewater Administration	1,688,300	2,511,100	822,800	48.7%	2,538,200	2,566,600	2,594,700	2,723,200
Water Resource Recovery Facility	$ 87,693,700	$ 90,641,400	$ 2,947,700	3.4%	$ 92,640,200	$ 93,845,100	$ 94,844,100	$ 96,613,800
Combined Sewer Overflow	13,912,000	12,371,300	(1,540,700)	-11.1%	12,612,200	10,656,800	11,333,100	11,196,700
Industrial Waste Control	2,917,300	2,559,100	(358,200)	-12.3%	2,595,700	2,598,400	2,544,700	2,516,500
Wastewater Engineering	2,572,700	2,262,000	(310,700)	-12.1%	1,965,300	2,004,300	2,227,700	1,965,800
Wastewater Laboratories	3,761,200	4,148,900	387,700	10.3%	3,812,000	3,847,400	3,867,300	3,897,000
Wastewater Operations Unallocated	2,440,500	3,264,900	824,400	33.8%	3,976,300	7,050,800	7,636,600	8,696,600
Grand Total	$ 114,985,700	$ 117,758,700	$ 2,773,000	2.4%	$ 120,139,900	$ 122,569,400	$ 125,048,200	$ 127,609,600

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Wastewater Operating Group's financial plan reflects a Five Year Overall increase of 11.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".

This rate of growth is not unexpected as planning of programs mature and a focus is placed on cost controls. As Wastewater Operations continues to focus on reliability through a proactive maintenance program and innovation the result will be an effective utility set to be sustainable into the future.



Effective Utility Management Measures

Open for 1.2019 revised draft

Capital Outlay

Wastewater Operations Group capital outlay is funded by the Improvement & Extension (I&E) budget.

Capital Outlay by Asset Category

Asset Categories	2020 Department Requested	2021 Department Requested	2022 Department Requested	2023 Department Requested	2024 Department Requested
Building/Structure Improvement	$ 1,007,500	$ 1,007,500	$ 1,007,500	$ 1,007,500	$ 1,007,500
Computers & IT	2,605,000	4,850,000	5,010,200		
Controls & Communication	85,000	105,000	5,900,000	452,000	4,500,000
Flow Measuring & Meters	720,000	725,000	500,000	120,000	120,000
Furniture & Fixtures	8,000				
Heavy Equipment		500,000			
Heavy Truck	385,000				410,000
Laboratory	133,000	25,000	84,100	167,700	34,000
Leasehold Improvements	800,000	450,000	950,000	450,000	250,000
Light Truck	495,000	270,000	380,000	250,000	160,000
Lighting	50,000	50,000	50,000	50,000	50,000
Machinery & Equipment		68,000			68,000
Passenger Vehicle	228,000	81,000	153,000	79,500	
Pipes, Gates & Valves	245,000	260,000	996,000	339,000	100,000
Process Equipment	790,000	264,000	399,000	511,200	288,000
Pumps & Motors	3,415,300	2,028,050	923,000	1,336,220	984,000
Tools, Shop & Warehouse	155,000	7,000	105,000		15,300
Utility Vehicle	50,000	25,000	8,000		
Grand Total	$11,171,800	$ 10,715,550	$ 16,465,800	$ 4,763,120	$ 7,986,800

Capital Outlay by Team

Team	2020 Department Requested	2021 Department Requested	2022 Department Requested	2023 Department Requested	2024 Department Requested
Water Resource Recovery Facility	$ 8,420,500	$ 8,795,500	$ 7,836,700	$ 2,160,500	$ 2,298,800
Wastewater Engineering	258,000	-	-	-	-
Industrial Waste Control	150,000	25,000	178,000	26,000	26,000
Wastewater Laboratories	135,000	-	34,100	141,700	8,000
Combined Sewer Overflow	2,208,300	1,895,050	8,417,000	2,434,920	5,654,000
Grand Total	$ 11,171,800	$ 10,715,550	$ 16,465,800	$ 4,763,120	$ 7,986,800

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in alphabetical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892001 - Chief Operating Officer Wastewater	**$ 1,700**	**$ 400**	**$ 1,688,300**	**$ 2,511,100**	**$ 2,538,200**	**$ 2,566,600**	**$ 2,594,700**	**$ 2,723,200**
2.1 Salaries & Wages	**1,400**	**400**	**1,234,100**	**1,108,500**	**1,108,500**	**1,108,500**	**1,108,500**	**1,108,500**
2.3 Overtime	**-**	**-**	**6,400**	**6,600**	**6,600**	**6,600**	**6,600**	**6,600**
2.4 Employee Benefits	**300**	**-**	**344,800**	**312,700**	**318,800**	**325,000**	**331,100**	**337,200**
2.5 Transition Services	**-**	**-**	**103,000**	**103,000**	**103,000**	**103,000**	**103,000**	**103,000**
4.2 Supplies & Other	**-**	**-**	**-**	**58,600**	**60,000**	**61,200**	**62,500**	**63,700**
Memberships, Licenses & Subscriptions	-	-	-	3,000	3,100	3,200	3,300	3,400
Mileage and Parking	-	-	-	5,000	5,100	5,200	5,300	5,400
Miscellaneous Expense	-	-	-	3,000	3,100	3,100	3,200	3,200
Office Supplies	-	-	-	9,000	9,200	9,400	9,500	9,700
Repairs & Maintenance-Equipment	-	-	-	3,300	3,400	3,500	3,600	3,700
Training and Internal Meetings	-	-	-	8,800	9,000	9,200	9,400	9,600
Travel	-	-	-	26,500	27,100	27,600	28,200	28,700
4.3 Contractual Services	**-**	**-**	**-**	**1,020,000**	**1,040,000**	**1,061,400**	**1,082,500**	**1,204,100**
5.1 Capital Program Allocation	**-**	**-**	**-**	**(98,300)**	**(98,700)**	**(99,100)**	**(99,500)**	**(99,900)**
892201 - Wastewater Director	**$ 2,611,400**	**$ 2,384,200**	**$ 4,359,500**	**$ 5,242,300**	**$ 5,422,600**	**$ 5,039,900**	**$ 4,887,000**	**$ 4,719,500**
2.1 Salaries & Wages	**1,048,000**	**994,100**	**1,783,300**	**2,017,400**	**2,052,000**	**2,207,200**	**2,207,200**	**2,207,200**
2.3 Overtime	**96,900**	**96,100**	**262,900**	**433,300**	**449,900**	**457,600**	**457,600**	**457,600**
2.4 Employee Benefits	**400,800**	**389,800**	**651,600**	**762,400**	**799,300**	**863,400**	**879,700**	**895,900**
2.5 Transition Services	**-**	**-**	**1,725,600**	**1,417,200**	**1,048,600**	**842,600**	**842,600**	**842,600**
2.6 Personnel Transition Adjustment	**-**	**-**	**(688,700)**	**-**	**-**	**-**	**-**	**-**
4.2 Supplies & Other	**286,300**	**183,000**	**116,100**	**372,000**	**632,000**	**219,500**	**207,500**	**18,000**
Capital Outlay less than $5,000	25,000	21,700	55,000	210,000	200,000	200,000	200,000	10,000
Memberships, Licenses & Subscriptions	5,500	2,200	4,500	-	-	-	-	-
Mileage and Parking	3,000	2,100	5,000	-	-	-	-	-
Office Supplies	8,000	7,500	8,000	-	-	-	-	-
Repairs & Maintenance-Equipment	37,000	34,400	3,300	137,000	407,000	7,000	7,500	8,000
Training and Internal Meetings	165,700	107,300	8,800	25,000	25,000	12,500	-	-
Travel	27,100	9,900	26,500	-	-	-	-	-
Tuition Refund	15,000	(2,100)	5,000	-	-	-	-	-
4.3 Contractual Services	**990,000**	**977,700**	**750,000**	**240,000**	**440,800**	**449,600**	**292,400**	**298,200**
5.1 Capital Program Allocation	**(210,600)**	**(256,500)**	**(241,300)**	**-**	**-**	**-**	**-**	**-**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892211 - Wastewater Engineering	**$ 3,014,300**	**$ 2,537,900**	**$ 2,572,700**	**$ 2,262,000**	**$ 1,965,300**	**$ 2,004,300**	**$ 2,227,700**	**$ 1,965,800**
2.1 Salaries & Wages	**1,706,800**	**1,704,800**	**1,636,000**	**1,569,100**	**1,569,100**	**1,569,100**	**1,569,100**	**1,569,100**
2.3 Overtime	**145,100**	**139,300**	**90,100**	**134,200**	**134,200**	**134,200**	**134,200**	**134,200**
2.4 Employee Benefits	**662,700**	**576,100**	**534,300**	**513,400**	**523,400**	**533,500**	**543,600**	**553,600**
2.5 Transition Services	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4.2 Supplies & Other	**100,900**	**59,800**	**233,500**	**251,200**	**60,900**	**94,800**	**63,100**	**46,200**
Capital Outlay less than $5,000	9,000	9,000	100,000	187,700	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ -	$ -	$ 81,000	$ -	$ -	$ -	$ -	$ -
Inspection and Permit Fees	500	-	-	-	-	-	-	-
Memberships, Licenses & Subscriptions	10,700	10,400	6,300	5,100	6,500	5,400	6,700	-
Mileage and Parking	10,500	8,800	10,000	10,200	10,400	10,600	10,800	-
Office Supplies	27,000	17,000	16,500	21,800	17,200	17,500	17,900	18,000
Operating Supplies	20,500	5,200	5,800	10,200	10,400	11,600	10,800	10,900
Repairs & Maintenance-Equipment	5,000	-	2,000	100	100	100	100	100
Training and Internal Meetings	5,000	1,900	100	3,100	3,100	3,100	3,100	3,000
Travel	11,700	6,700	11,800	9,000	9,200	42,500	9,700	10,200
Tuition Refund	1,000	800	-	4,000	4,000	4,000	4,000	4,000
4.3 Contractual Services	**995,000**	**749,600**	**675,000**	**900,000**	**788,500**	**788,500**	**1,038,500**	**788,500**
5.1 Capital Program Allocation	**(596,200)**	**(691,700)**	**(596,200)**	**(1,105,900)**	**(1,110,800)**	**(1,115,800)**	**(1,120,800)**	**(1,125,800)**
892221 - Wastewater Operations	**$ 63,965,000**	**$ 56,206,700**	**$ 28,161,300**	**$ 29,151,900**	**$ 30,742,300**	**$ 31,676,700**	**$ 32,239,200**	**$ 32,807,800**
2.1 Salaries & Wages	**12,462,100**	**11,708,400**	**677,400**	**753,500**	**888,000**	**955,200**	**955,200**	**955,200**
2.2 Workforce Development	**201,600**	**201,600**	**-**	**-**	**-**	**-**	**-**	**-**
2.3 Overtime	**2,277,000**	**2,046,900**	**81,200**	**147,700**	**174,000**	**187,200**	**187,200**	**187,200**
2.4 Employee Benefits	**5,505,800**	**5,421,200**	**226,600**	**263,200**	**315,500**	**345,600**	**352,100**	**358,600**
2.5 Transition Services	**4,989,200**	**4,961,500**	**297,000**	**302,900**	**-**	**-**	**-**	**-**
2.6 Personnel Transition Adjustment	**(11,200)**	**-**	**(24,300)**	**-**	**-**	**-**	**-**	**-**
3.1 Electric	**11,025,100**	**11,025,100**	**11,097,100**	**11,319,000**	**11,545,400**	**11,776,300**	**12,011,800**	**12,252,000**
3.2 Gas	**3,308,600**	**3,299,000**	**3,360,400**	**3,499,900**	**3,604,900**	**3,713,000**	**3,824,400**	**3,939,100**
3.3 Sewage Service	**541,900**	**541,700**	**620,000**	**587,200**	**598,900**	**610,900**	**623,100**	**635,600**
3.4 Water Service	**3,964,900**	**3,965,200**	**5,004,700**	**4,123,800**	**4,206,300**	**4,290,400**	**4,376,200**	**4,463,700**
4.1 Chemicals	**48,300**	**38,300**	**1,200**	**2,000**	**2,000**	**2,000**	**2,000**	**2,000**
4.2 Supplies & Other	**5,560,400**	**4,714,100**	**3,260,000**	**4,294,400**	**4,291,500**	**4,365,100**	**4,445,700**	**4,522,100**
Capital Outlay less than $5,000	49,000	46,200	53,000	-	3,000	-	3,000	-
Capital Outlay over $5k(O&M-Capitalized)	$ 286,800	$ 15,600	$ -	$ -	$ -	$ -	$ -	$ -
Inspection and Permit Fees	332,100	238,000	256,000	250,200	255,200	260,300	265,500	270,800
Memberships, Licenses & Subscriptions	-	200	-	-	-	-	-	-
Mileage and Parking	3,000	100	3,000	-	-	-	-	-
Office Supplies	46,000	45,300	45,000	51,000	52,000	53,100	54,100	55,200
Operating Supplies	278,000	276,700	265,000	181,000	184,600	188,300	192,100	195,900
Penalties	200,000	31,200	200,000	200,000	200,000	200,000	200,000	200,000
Repairs & Maintenance-Equipment	346,500	269,100	290,000	296,000	301,900	308,000	314,100	320,400
Repairs & Maintenance-Facilities	3,938,600	3,735,900	1,880,000	3,009,000	3,022,800	3,077,900	3,134,000	3,191,200
Repairs & Maintenance-Software	-	-	-	40,000	-	-	-	-
Training and Internal Meetings	11,000	2,000	156,500	155,500	158,600	161,800	165,000	168,300
Travel	1,000	800	1,500	1,500	1,500	1,500	1,500	1,500
Tuition Refund	3,000	2,500	8,000	8,000	8,000	8,000	8,000	8,000
Uniforms, Laundry, Cleaning	65,400	50,500	102,000	102,200	103,900	106,200	108,400	110,800
4.3 Contractual Services	**14,175,300**	**8,305,100**	**3,644,000**	**3,858,300**	**5,115,800**	**5,431,000**	**5,461,500**	**5,492,300**
5.1 Capital Program Allocation	**(84,000)**	**(21,400)**	**(84,000)**	**-**	**-**	**-**	**-**	**-**
892222 - Wastewater Process Control	**$ 1,684,900**	**$ 1,081,200**	**$ 4,526,800**	**$ 4,944,700**	**$ 4,507,200**	**$ 4,835,100**	**$ 4,824,500**	**$ 5,388,200**
2.1 Salaries & Wages	**15,000**	**14,800**	**1,597,500**	**1,310,400**	**1,399,600**	**1,660,200**	**1,660,200**	**1,660,200**
2.2 Workforce Development	**-**	**-**	**32,500**	**39,900**	**39,900**	**39,900**	**39,900**	**39,900**
2.3 Overtime	**-**	**-**	**145,200**	**136,900**	**148,100**	**148,100**	**148,100**	**148,100**
2.4 Employee Benefits	**-**	**-**	**543,300**	**446,500**	**499,700**	**567,700**	**578,400**	**588,300**
2.5 Transition Services	**-**	**-**	**-**	**267,300**	**79,200**	**-**	**-**	**-**
4.1 Chemicals	**44,400**	**44,200**	**34,000**	**45,000**	**45,900**	**46,800**	**47,700**	**48,700**
4.2 Supplies & Other	**390,200**	**204,600**	**274,300**	**855,000**	**434,200**	**494,000**	**453,100**	**598,800**
Capital Outlay less than $5,000	15,300	15,300	157,800	429,600	4,700	60,400	14,200	151,700
Capital Outlay over $5k(O&M-Capitalized)	$ -	$ 55,800	$ -	$ -	$ -	$ -	$ -	$ -
Operating Supplies	7,000	2,600	1,000	7,100	7,100	7,100	7,100	7,300
Repairs & Maintenance-Equipment	80,700	22,600	33,000	133,300	134,600	136,000	138,400	140,800
Repairs & Maintenance-Hardware	204,800	85,300	52,500	255,000	257,600	260,100	262,700	268,000
Repairs & Maintenance-Software	62,400	8,000	-	10,000	10,200	10,400	10,700	11,000
Training and Internal Meetings	20,000	15,000	30,000	20,000	20,000	20,000	20,000	20,000
Tuition Refund	-	-	-	-	-	-	-	-
4.3 Contractual Services	**1,311,200**	**893,900**	**1,900,000**	**1,904,100**	**1,922,200**	**1,941,200**	**1,961,200**	**2,369,600**
5.2 Shared Services	**(75,900)**	**(76,300)**	**-**	**(60,400)**	**(61,600)**	**(62,800)**	**(64,100)**	**(65,400)**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892223 - Wastewater Primary Process	**$ 2,845,400**	**$ 2,615,700**	**$ 6,594,800**	**$ 7,463,600**	**$ 7,480,000**	**$ 7,437,300**	**$ 7,522,600**	**$ 7,613,700**
2.1 Salaries & Wages	**13,000**	**12,700**	**2,008,300**	**2,087,300**	**2,154,500**	**2,154,500**	**2,154,500**	**2,154,500**
2.2 Workforce Development	**-**	**-**	**32,500**	**39,900**	**39,900**	**39,900**	**39,900**	**39,900**
2.3 Overtime	**-**	**-**	**412,800**	**469,600**	**469,600**	**469,600**	**469,600**	**469,600**
2.4 Employee Benefits	**-**	**-**	**830,400**	**866,900**	**903,400**	**920,800**	**936,000**	**955,600**
2.5 Transition Services	**-**	**-**	**698,100**	**453,900**	**299,100**	**299,100**	**299,100**	**299,100**
2.6 Personnel Transition Adjustment	**-**	**-**	**(280,300)**	**-**	**-**	**-**	**-**	**-**
4.1 Chemicals	**1,365,400**	**1,358,400**	**1,550,000**	**2,086,000**	**2,128,000**	**2,171,000**	**2,214,000**	**2,258,000**
4.2 Supplies & Other	**1,332,000**	**1,118,000**	**1,218,000**	**1,304,000**	**1,326,600**	**1,220,500**	**1,244,600**	**1,269,100**
Capital Outlay less than $5,000	13,000	12,800	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 60,000	$ 54,900	$ -	$ -	$ -	$ -	$ -	$ -
Operating Supplies	34,000	33,700	40,000	40,000	40,800	41,600	42,400	43,300
Repairs & Maintenance-Equipment	1,225,000	1,016,600	1,178,000	1,264,000	1,285,800	1,178,900	1,202,200	1,225,800
4.3 Contractual Services	**135,000**	**126,600**	**125,000**	**156,000**	**158,900**	**161,900**	**164,900**	**167,900**
892224 - Wastewater Secondary Process	**$ 6,219,600**	**$ 6,198,500**	**$ 11,567,100**	**$ 11,099,900**	**$ 11,107,000**	**$ 11,155,800**	**$ 11,264,800**	**$ 11,573,200**
2.1 Salaries & Wages	**35,000**	**34,500**	**2,372,400**	**2,215,400**	**2,215,400**	**2,215,400**	**2,215,400**	**2,215,400**
2.2 Workforce Development	**-**	**-**	**32,500**	**111,400**	**111,400**	**111,400**	**111,400**	**111,400**
2.3 Overtime	**-**	**-**	**446,900**	**427,900**	**427,700**	**427,500**	**427,500**	**427,500**
2.4 Employee Benefits	**-**	**-**	**903,500**	**859,200**	**895,600**	**915,200**	**908,100**	**947,300**
2.5 Transition Services	**-**	**-**	**416,200**	**147,600**	**147,600**	**147,600**	**147,600**	**147,600**
2.6 Personnel Transition Adjustment	**-**	**-**	**(174,300)**	**-**	**-**	**-**	**-**	**-**
4.1 Chemicals	**4,584,600**	**4,583,400**	**6,189,900**	**5,753,200**	**5,925,000**	**6,057,000**	**6,234,200**	**6,378,200**
4.2 Supplies & Other	**1,045,000**	**1,026,100**	**780,000**	**956,000**	**1,099,100**	**992,500**	**1,011,500**	**1,132,600**
Capital Outlay less than $5,000	15,000	10,700	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 50,000	$ 40,300	$ -	$ -	$ -	$ -	$ -	$ -
Operating Supplies	50,000	49,600	50,000	55,000	56,100	57,200	58,400	59,500
Repairs & Maintenance-Equipment	925,000	924,200	730,000	901,000	1,043,000	935,300	953,100	1,073,100
Training and Internal Meetings	5,000	1,300	-	-	-	-	-	-
Tuition Refund	-	-	-	-	-	-	-	-
4.3 Contractual Services	**555,000**	**554,500**	**600,000**	**629,200**	**285,200**	**289,200**	**209,100**	**213,200**
892225 - Wastewater Dewatering Process	**$ 2,248,300**	**$ 1,990,000**	**$ 6,095,900**	**$ 5,636,700**	**$ 5,851,200**	**$ 5,971,700**	**$ 6,026,800**	**$ 6,106,400**
2.1 Salaries & Wages	**12,500**	**12,400**	**2,265,500**	**2,139,400**	**2,206,600**	**2,206,600**	**2,206,600**	**2,206,600**
2.2 Workforce Development	**-**	**-**	**33,400**	**39,900**	**39,900**	**39,900**	**39,900**	**39,900**
2.3 Overtime	**-**	**-**	**486,900**	**370,500**	**381,900**	**381,900**	**381,900**	**381,900**
2.4 Employee Benefits	**-**	**-**	**927,800**	**869,400**	**909,700**	**927,200**	**944,700**	**962,200**
2.5 Transition Services	**-**	**-**	**57,600**	**151,500**	**151,500**	**151,500**	**151,500**	**151,500**
2.6 Personnel Transition Adjustment	**-**	**-**	**(47,900)**	**-**	**-**	**-**	**-**	**-**
4.1 Chemicals	**719,600**	**705,500**	**1,000,000**	**679,000**	**746,900**	**821,600**	**830,400**	**863,000**
4.2 Supplies & Other	**1,336,200**	**1,182,400**	**1,265,600**	**1,280,000**	**1,305,600**	**1,331,700**	**1,358,300**	**1,385,500**
Capital Outlay less than $5,000	21,500	21,300	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 50,000	$ 28,500	$ -	$ -	$ -	$ -	$ -	$ -
Capital Outlay over $5k(O&M-NonCapitlzd)	$ -	$ (17,900)	$ -	$ -	$ -	$ -	$ -	$ -
Operating Supplies	186,000	185,900	165,600	180,000	183,600	187,300	191,000	194,800
Repairs & Maintenance-Equipment	1,078,700	964,600	1,100,000	1,100,000	1,122,000	1,144,400	1,167,300	1,190,700
4.3 Contractual Services	**180,000**	**89,700**	**107,000**	**107,000**	**109,100**	**111,300**	**113,500**	**115,800**
892226 - Wastewater Incineration Process	**$ 2,108,100**	**$ 1,812,100**	**$ 5,675,400**	**$ 5,274,000**	**$ 5,190,500**	**$ 5,157,700**	**$ 5,172,800**	**$ 5,233,800**
2.1 Salaries & Wages	**12,500**	**12,500**	**2,306,400**	**2,155,200**	**2,194,100**	**2,194,100**	**2,194,100**	**2,194,100**
2.2 Workforce Development	**-**	**-**	**65,100**	**155,000**	**155,000**	**155,000**	**155,000**	**155,000**
2.3 Overtime	**-**	**-**	**461,800**	**218,100**	**221,900**	**221,900**	**221,900**	**221,900**
2.4 Employee Benefits	**-**	**-**	**963,300**	**890,600**	**924,500**	**942,300**	**960,100**	**977,900**
2.5 Transition Services	**-**	**-**	**273,300**	**103,000**	**-**	**-**	**-**	**-**
2.6 Personnel Transition Adjustment	**-**	**-**	**(116,200)**	**-**	**-**	**-**	**-**	**-**
4.1 Chemicals	**218,000**	**198,200**	**974,200**	**618,000**	**618,000**	**630,400**	**630,400**	**630,400**
4.2 Supplies & Other	**1,776,500**	**1,568,000**	**692,500**	**984,100**	**926,000**	**862,000**	**858,200**	**900,400**
Capital Outlay less than $5,000	58,000	57,300	-	5,100	9,700	4,000	4,500	4,500
Capital Outlay over $5k(O&M-Capitalized)	$ 45,000	$ 33,300	$ -	$ -	$ -	$ -	$ -	$ -
Operating Supplies	23,500	23,500	25,000	25,000	25,500	26,000	26,500	27,100
Repairs & Maintenance-Equipment	1,650,000	1,453,900	667,500	954,000	890,800	832,000	827,200	868,800
4.3 Contractual Services	**101,100**	**33,400**	**55,000**	**150,000**	**151,000**	**152,000**	**153,100**	**154,100**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892227 - BDF, COF & Hauling	**$ 18,796,500**	**$ 18,782,100**	**$ 20,655,700**	**$ 21,766,000**	**$ 22,277,100**	**$ 22,508,200**	**$ 22,843,400**	**$ 23,108,200**
2.1 Salaries & Wages	-	-	**449,600**	**451,000**	**528,800**	**528,800**	**528,800**	**528,800**
2.3 Overtime	-	-	**101,900**	**62,700**	**73,500**	**73,500**	**73,500**	**73,500**
2.4 Employee Benefits	-	-	**184,000**	**177,900**	**215,000**	**219,200**	**223,300**	**227,400**
2.5 Transition Services	-	-	**102,600**	**103,000**	-	-	-	-
2.6 Personnel Transition Adjustment	-	-	**(32,000)**	-	-	-	-	-
3.1 Electric	**1,096,400**	**1,095,600**	**1,099,000**	**1,100,000**	**1,100,000**	**1,100,000**	**1,200,000**	**1,200,000**
3.2 Gas	**2,146,600**	**2,146,900**	**2,157,400**	**2,160,000**	**2,160,000**	**2,170,000**	**2,180,000**	**2,190,000**
3.3 Sewage Service	**221,500**	**221,100**	**66,400**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**
3.4 Water Service	**134,400**	**133,200**	**125,300**	**136,400**	**137,500**	**138,600**	**139,700**	**140,900**
4.2 Supplies & Other	-	-	-	-	-	-	-	-
Repairs & Maintenance-Equipment	-	-	-	-	-	-	-	-
4.3 Contractual Services	**15,197,600**	**15,185,300**	**16,401,500**	**17,325,000**	**17,812,300**	**18,028,100**	**18,248,100**	**18,497,600**
892231 - Industrial Waste Control	**$ 5,429,100**	**$ 5,162,600**	**$ 2,792,300**	**$ 2,407,100**	**$ 2,443,700**	**$ 2,446,400**	**$ 2,388,700**	**$ 2,360,500**
2.1 Salaries & Wages	**3,209,300**	**3,134,200**	**1,508,400**	**1,538,400**	**1,538,400**	**1,538,400**	**1,538,400**	**1,538,400**
2.3 Overtime	**412,500**	**370,000**	**282,800**	**12,300**	**12,300**	**12,300**	**12,300**	**12,300**
2.4 Employee Benefits	**1,202,900**	**1,201,300**	**571,300**	**527,200**	**537,500**	**547,800**	**558,200**	**568,500**
3.1 Electric	**93,700**	**90,200**	**57,600**	-	-	-	-	-
3.2 Gas	**53,400**	**44,000**	**17,600**	-	-	-	-	-
3.3 Sewage Service	**20,100**	**22,200**	**17,200**	-	-	-	-	-
3.4 Water Service	**5,700**	**4,400**	**4,100**	-	-	-	-	-
4.1 Chemicals	-	-	-	-	-	-	-	-
4.2 Supplies & Other	**217,500**	**115,100**	**248,300**	**156,300**	**176,400**	**168,400**	**175,100**	**136,100**
Advertising	32,500	32,300	35,000	35,000	40,000	40,000	40,000	42,000
Capital Outlay less than $5,000	86,000	28,800	31,100	4,800	17,200	4,200	17,200	5,200
Capital Outlay over $5k(O&M-Capitalized)	$ -	$ -	$ 50,000	$ -	$ -	$ -	$ -	$ -
Inspection and Permit Fees	5,000	600	5,000	600	100	100	100	100
Memberships, Licenses & Subscriptions	8,000	300	10,500	12,500	12,600	12,600	12,600	2,000
Mileage and Parking	400	-	1,600	1,600	800	800	800	800
Office Supplies	20,000	17,700	17,500	18,500	17,500	17,500	19,500	20,000
Operating Supplies	22,000	19,600	20,000	25,000	30,000	35,000	35,000	40,000
Operating Supplies-Janitorial	5,000	1,800	5,000	5,000	5,000	5,000	5,000	5,000
Postage	-	-	20,000	20,000	22,500	22,500	22,700	-
Printing	-	-	15,000	5,000	5,000	5,000	-	-
Repairs & Maintenance-Equipment	7,500	400	15,300	9,000	10,000	10,000	10,000	10,000
Repairs & Maintenance-Facilities	10,000	9,600	-	-	-	-	-	-
Training and Internal Meetings	17,500	1,100	17,500	14,500	10,500	10,500	7,000	7,000
Travel	-	-	1,200	1,200	1,200	1,200	1,200	-
Tuition Refund	-	100	-	-	-	-	-	-
Uniforms, Laundry, Cleaning	3,600	2,800	3,600	3,600	4,000	4,000	4,000	4,000
4.3 Contractual Services	**214,000**	**181,200**	**85,000**	**172,900**	**179,100**	**179,500**	**104,700**	**105,200**
892235 - Wastewater Laboratories	**$ 927,700**	**$ 884,300**	**$ 3,761,200**	**$ 4,148,900**	**$ 3,812,000**	**$ 3,847,400**	**$ 3,867,300**	**$ 3,897,000**
2.1 Salaries & Wages	**11,000**	**10,800**	**1,900,100**	**2,287,900**	**2,287,900**	**2,287,900**	**2,287,900**	**2,287,900**
2.3 Overtime	-	-	**124,300**	**273,700**	**273,700**	**273,700**	**273,700**	**273,700**
2.4 Employee Benefits	-	-	**647,600**	**788,000**	**803,400**	**818,900**	**834,300**	**849,800**
4.1 Chemicals	**74,000**	**68,800**	**77,000**	**109,300**	**111,400**	**112,500**	**116,300**	**118,800**
4.2 Supplies & Other	**548,400**	**523,600**	**717,200**	**380,600**	**84,900**	**97,000**	**88,400**	**95,400**
Capital Outlay less than $5,000	3,500	3,300	3,300	2,000	-	6,000	1,500	7,000
Capital Outlay over $5k(O&M-Capitalized)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Memberships, Licenses & Subscriptions	7,000	4,000	7,000	-	-	5,000	-	-
Office Supplies	-	-	-	-	-	-	-	-
Operating Supplies	48,000	47,800	54,000	59,200	59,800	60,700	61,400	62,700
Rentals-Buildings	448,900	445,000	448,900	224,400	-	-	-	-
Repairs & Maintenance-Equipment	20,000	6,700	20,000	27,500	17,600	17,800	18,000	18,200
Repairs & Maintenance-Facilities	15,000	14,300	170,000	60,000	-	-	-	-
Training and Internal Meetings	-	-	8,000	4,000	4,000	4,000	4,000	4,000
Uniforms, Laundry, Cleaning	6,000	2,500	6,000	3,500	3,500	3,500	3,500	3,500
4.3 Contractual Services	**294,300**	**281,100**	**295,000**	**309,400**	**250,700**	**257,400**	**266,700**	**271,400**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892270 - Combined Sewer Overflow	**$ 3,017,400**	**$ 2,396,700**	**$ 5,798,300**	**$ 5,846,900**	**$ 6,130,800**	**$ 6,419,400**	**$ 6,793,500**	**$ 6,818,200**
2.1 Salaries & Wages	**1,225,700**	**664,000**	**1,185,200**	**1,498,400**	**1,576,000**	**1,595,800**	**1,595,800**	**1,595,800**
2.3 Overtime	**448,900**	**374,000**	**618,000**	**349,900**	**372,600**	**378,600**	**378,600**	**378,600**
2.4 Employee Benefits	**328,100**	**309,400**	**537,400**	**581,300**	**620,500**	**637,300**	**649,400**	**661,400**
2.5 Transition Services	**889,100**	**963,100**	**540,000**	**749,700**	**749,700**	**749,700**	**749,700**	**749,700**
2.6 Personnel Transition Adjustment	**-**	**-**	**(212,000)**	**-**	**-**	**-**	**-**	**-**
4.2 Supplies & Other	**15,600**	**13,300**	**11,700**	**20,800**	**20,900**	**21,100**	**21,200**	**21,300**
Inspection and Permit Fees	1,000	1,000	-	-	-	-	-	-
Mileage and Parking	2,100	2,000	-	2,400	2,400	2,400	2,400	2,400
Operating Supplies	5,800	5,500	5,000	1,500	1,500	1,500	1,500	1,500
Training and Internal Meetings	-	-	-	3,000	3,000	3,000	3,000	3,000
Travel	-	300	-	5,500	5,500	5,500	5,500	5,500
Tuition Refund	-	100	-	1,500	1,500	1,500	1,500	1,500
Uniforms, Laundry, Cleaning	6,700	4,400	6,700	6,900	7,000	7,200	7,300	7,400
4.3 Contractual Services	**110,000**	**72,900**	**3,118,000**	**2,701,000**	**2,845,900**	**3,092,200**	**3,454,700**	**3,467,800**
5.1 Capital Program Allocation	**-**	**-**	**-**	**(35,200)**	**(35,400)**	**(35,500)**	**(35,700)**	**(35,800)**
5.2 Shared Services	**-**	**-**	**-**	**(19,000)**	**(19,400)**	**(19,800)**	**(20,200)**	**(20,600)**
892271 - Puritan Fenkell Combined Sewer Overflow	**$ 317,700**	**$ 242,900**	**$ 227,100**	**$ 293,000**	**$ 287,400**	**$ 294,600**	**$ 302,200**	**$ 309,500**
3.1 Electric	**46,100**	**47,800**	**43,100**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**
3.2 Gas	**5,200**	**200**	**25,900**	**5,500**	**5,500**	**5,500**	**5,500**	**5,500**
3.3 Sewage Service	**12,300**	**9,900**	**4,700**	**11,000**	**11,000**	**11,300**	**11,800**	**11,800**
3.4 Water Service	**7,400**	**8,800**	**6,900**	**9,000**	**9,100**	**9,300**	**9,400**	**9,500**
4.1 Chemicals	**12,000**	**11,000**	**11,000**	**11,000**	**11,000**	**11,000**	**11,000**	**11,000**
4.2 Supplies & Other	**204,700**	**160,500**	**135,500**	**206,500**	**200,800**	**207,500**	**214,500**	**221,700**
Capital Outlay less than $5,000	20,000	16,400	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 44,200	$ 7,400	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	1,000	200	500	200	200	200	200	200
Operating Supplies	6,500	4,700	5,000	30,500	31,000	31,600	32,200	32,800
Repairs & Maintenance-Equipment	105,000	104,500	100,000	85,800	75,100	76,500	77,900	79,300
Repairs & Maintenance-Facilities	28,000	27,300	30,000	90,000	94,500	99,200	104,200	109,400
4.3 Contractual Services	**30,000**	**4,700**	**-**	**-**	**-**	**-**	**-**	**-**
892272 - 7 Mile Combined Sewer Overflow	**$ 230,400**	**$ 154,000**	**$ 176,000**	**$ 130,300**	**$ 131,600**	**$ 133,600**	**$ 136,500**	**$ 138,100**
3.1 Electric	**22,800**	**25,200**	**16,900**	**21,000**	**21,000**	**21,500**	**22,000**	**22,000**
3.2 Gas	**17,100**	**13,900**	**6,500**	**15,500**	**15,500**	**15,800**	**16,200**	**16,200**
3.3 Sewage Service	**5,600**	**5,300**	**11,000**	**7,500**	**7,500**	**7,500**	**7,500**	**7,500**
3.4 Water Service	**28,600**	**32,500**	**18,600**	**35,000**	**35,000**	**35,000**	**35,500**	**35,500**
4.1 Chemicals	**6,900**	**4,400**	**5,000**	**5,400**	**5,400**	**5,400**	**5,600**	**5,600**
4.2 Supplies & Other	**129,400**	**69,300**	**118,000**	**45,900**	**47,200**	**48,400**	**49,700**	**51,300**
Capital Outlay over $5k(O&M-Capitalized)	$ 10,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	1,000	200	-	-	-	-	-	-
Operating Supplies	11,000	8,900	9,000	10,500	11,100	11,600	12,200	12,800
Repairs & Maintenance-Equipment	79,800	38,400	70,000	16,200	16,700	17,200	17,800	18,300
Repairs & Maintenance-Facilities	27,000	21,800	39,000	19,200	19,400	19,600	19,700	20,200
4.3 Contractual Services	**20,000**	**3,400**	**-**	**-**	**-**	**-**	**-**	**-**
892273 - Hubble Southfield CSO	**$ 637,800**	**$ 572,800**	**$ 464,800**	**$ 472,400**	**$ 475,200**	**$ 479,300**	**$ 487,500**	**$ 490,300**
3.1 Electric	**62,300**	**62,900**	**57,200**	**62,300**	**62,300**	**62,700**	**63,000**	**63,000**
3.2 Gas	**25,400**	**22,400**	**14,400**	**25,400**	**25,400**	**25,900**	**26,300**	**26,300**
3.3 Sewage Service	**2,400**	**1,500**	**1,800**	**1,900**	**1,900**	**1,900**	**2,000**	**2,000**
3.4 Water Service	**104,100**	**104,000**	**78,000**	**105,000**	**105,000**	**105,500**	**106,000**	**106,000**
4.1 Chemicals	**123,400**	**129,100**	**125,000**	**152,000**	**152,000**	**152,000**	**156,000**	**156,000**
4.2 Supplies & Other	**275,200**	**227,100**	**188,400**	**125,800**	**128,600**	**131,300**	**134,200**	**137,000**
Capital Outlay less than $5,000	18,500	18,500	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 31,900	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	3,000	-	-	-	-	-	-	-
Operating Supplies	8,600	8,500	7,500	10,500	11,100	11,600	12,200	12,800
Repairs & Maintenance-Equipment	156,300	143,300	125,000	99,100	101,100	103,000	105,100	107,100
Repairs & Maintenance-Facilities	56,900	56,800	55,900	16,200	16,400	16,700	16,900	17,100
4.3 Contractual Services	**45,000**	**25,800**	**-**	**-**	**-**	**-**	**-**	**-**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892274 - Leib Combined Sewer Overflow	**$ 400,100**	**$ 230,400**	**$ 258,700**	**$ 145,800**	**$ 148,300**	**$ 151,600**	**$ 154,700**	**$ 158,300**
3.1 Electric	**24,200**	**23,500**	**28,000**	**28,800**	**29,700**	**30,600**	**31,500**	**33,100**
3.2 Gas	**17,000**	**14,200**	**8,900**	**18,000**	**18,000**	**18,500**	**18,800**	**19,000**
3.3 Sewage Service	**2,000**	**1,300**	**15,400**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**
3.4 Water Service	**-**	**-**	**24,200**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
4.1 Chemicals	**21,300**	**23,300**	**24,000**	**25,000**	**25,000**	**25,000**	**25,000**	**25,000**
4.2 Supplies & Other	**315,600**	**149,200**	**158,200**	**66,500**	**68,100**	**70,000**	**71,900**	**73,700**
Capital Outlay over $5k(O&M-Capitalized)	$ 25,100	$ 8,400	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	2,000	1,900	2,000	-	-	-	-	-
Operating Supplies	7,000	5,300	5,200	5,000	5,200	5,500	5,800	6,100
Repairs & Maintenance-Equipment	275,500	125,300	103,000	53,300	54,600	56,000	57,400	58,800
Repairs & Maintenance-Facilities	6,000	8,300	48,000	8,200	8,300	8,500	8,700	8,800
4.3 Contractual Services	**20,000**	**18,900**	**-**	**-**	**-**	**-**	**-**	**-**
892275 - St Aubin Combined Sewer Overflow	**$ 316,200**	**$ 232,200**	**$ 294,700**	**$ 165,900**	**$ 148,400**	**$ 151,100**	**$ 156,800**	**$ 152,400**
3.1 Electric	**33,200**	**33,100**	**28,700**	**29,300**	**29,900**	**30,500**	**31,100**	**32,600**
3.2 Gas	**7,300**	**5,600**	**4,400**	**6,000**	**6,000**	**6,500**	**6,800**	**6,800**
3.3 Sewage Service	**2,000**	**1,200**	**15,800**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**
3.4 Water Service	**2,500**	**2,300**	**24,800**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**
4.1 Chemicals	**31,700**	**28,500**	**32,000**	**32,000**	**32,000**	**32,000**	**35,000**	**35,000**
4.2 Supplies & Other	**239,500**	**161,500**	**189,000**	**93,600**	**75,500**	**77,100**	**78,900**	**73,000**
Capital Outlay less than $5,000	-	-	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 10,600	$ 11,000	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	1,000	200	500	-	-	-	-	-
Operating Supplies	9,000	7,800	8,000	10,500	11,200	11,600	12,200	12,800
Repairs & Maintenance-Equipment	158,900	124,500	120,500	53,000	54,100	55,200	56,300	49,700
Repairs & Maintenance-Facilities	60,000	18,000	60,000	30,100	10,200	10,300	10,400	10,500
4.3 Contractual Services	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
892276 - Connor Creek Combined Sewer Overflow	**$ 1,529,600**	**$ 1,483,700**	**$ 1,540,200**	**$ 1,250,100**	**$ 1,255,000**	**$ 1,261,600**	**$ 1,294,100**	**$ 1,299,600**
3.1 Electric	**254,100**	**254,100**	**166,300**	**255,000**	**255,000**	**255,500**	**256,000**	**256,000**
3.2 Gas	**59,500**	**56,400**	**50,200**	**57,200**	**57,200**	**57,800**	**58,000**	**58,000**
3.3 Sewage Service	**100,100**	**103,100**	**452,000**	**125,000**	**125,000**	**125,000**	**126,000**	**126,000**
3.4 Water Service	**55,600**	**44,100**	**135,200**	**55,000**	**55,000**	**55,400**	**56,000**	**56,000**
4.1 Chemicals	**476,000**	**476,000**	**460,000**	**535,000**	**535,000**	**535,000**	**560,000**	**560,000**
4.2 Supplies & Other	**404,300**	**372,200**	**276,500**	**222,900**	**227,800**	**232,900**	**238,100**	**243,600**
Capital Outlay less than $5,000	6,000	5,200	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	$ 10,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Memberships, Licenses & Subscriptions	-	100	-	-	-	-	-	-
Office Supplies	6,000	5,400	5,500	5,100	5,200	5,300	5,400	5,500
Operating Supplies	22,200	22,900	23,000	15,000	15,700	16,500	17,400	18,300
Repairs & Maintenance-Equipment	231,500	214,100	190,000	167,500	171,300	175,200	179,100	183,200
Repairs & Maintenance-Facilities	128,000	124,500	58,000	35,300	35,600	35,900	36,200	36,600
4.3 Contractual Services	**180,000**	**177,800**	**-**	**-**	**-**	**-**	**-**	**-**
892277 - Baby Creek Combined Sewer Overflow	**$ 1,920,900**	**$ 1,067,400**	**$ 3,482,100**	**$ 2,974,900**	**$ 2,905,900**	**$ 677,000**	**$ 708,200**	**$ 728,100**
3.1 Electric	**110,800**	**110,700**	**148,000**	**151,000**	**154,000**	**157,100**	**160,200**	**163,400**
3.2 Gas	**40,800**	**38,600**	**38,100**	**38,800**	**39,600**	**40,400**	**41,200**	**43,300**
3.3 Sewage Service	**-**	**-**	**55,900**	**7,000**	**7,000**	**7,000**	**7,000**	**7,000**
3.4 Water Service	**-**	**-**	**87,600**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
4.1 Chemicals	**300,700**	**286,900**	**343,500**	**350,000**	**350,000**	**350,000**	**390,000**	**390,000**
4.2 Supplies & Other	**425,200**	**287,300**	**2,809,000**	**2,423,100**	**2,350,300**	**117,500**	**104,800**	**119,400**
Capital Outlay over $5k(O&M-Capitalized)	$ 10,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	4,000	200	500	-	-	-	-	-
Operating Supplies	27,000	22,500	22,500	10,500	11,000	11,600	12,200	12,800
Repairs & Maintenance-Equipment	158,400	157,900	271,000	67,300	68,700	85,000	71,400	85,000
Repairs & Maintenance-Facilities	225,200	106,700	2,515,000	2,345,300	2,270,600	20,900	21,200	21,600
4.3 Contractual Services	**1,043,400**	**343,900**	**-**	**-**	**-**	**-**	**-**	**-**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892278 - Oakwood Combined Sewer Overflow	**$ 1,492,700**	**$ 1,364,400**	**$ 1,714,700**	**$ 1,306,300**	**$ 1,343,800**	**$ 1,303,100**	**$ 1,518,600**	**$ 1,321,200**
3.1 Electric	**427,600**	**427,500**	**504,700**	**475,000**	**475,000**	**480,000**	**485,000**	**485,000**
3.2 Gas	**20,300**	**16,300**	**10,500**	**18,300**	**18,300**	**18,500**	**18,800**	**18,800**
3.3 Sewage Service	**347,900**	**347,600**	**523,500**	**385,600**	**385,600**	**386,000**	**387,300**	**387,300**
3.4 Water Service	**169,500**	**169,100**	**143,000**	**190,000**	**190,000**	**191,000**	**192,000**	**192,000**
4.1 Chemicals	**109,000**	**108,700**	**110,000**	**110,000**	**110,000**	**110,000**	**115,000**	**115,000**
4.2 Supplies & Other	**358,400**	**273,300**	**423,000**	**127,400**	**164,900**	**117,600**	**320,500**	**123,100**
Capital Outlay over $5k(O&M-Capitalized)	$ 10,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	2,000	300	500	-	-	-	-	-
Operating Supplies	11,000	9,200	10,000	10,500	11,200	11,600	12,200	12,800
Repairs & Maintenance-Equipment	95,800	24,800	218,500	96,900	133,700	86,000	138,300	90,300
Repairs & Maintenance-Facilities	239,000	239,000	194,000	20,000	20,000	20,000	170,000	20,000
4.3 Contractual Services	**60,000**	**21,900**	**-**	**-**	**-**	**-**	**-**	**-**
892279 - Belle Isle Combined Sewer Overflow	**$ 79,200**	**$ (200)**	**$ 137,600**	**$ -**	**$ 100**	**$ 200**	**$ -**	**$ -**
4.1 Chemicals	**7,000**	**8,300**	**10,000**	**11,000**	**11,000**	**11,000**	**15,000**	**15,000**
4.2 Supplies & Other	**182,600**	**102,700**	**134,000**	**63,900**	**65,500**	**67,100**	**68,800**	**90,600**
Capital Outlay over $5k(O&M-Capitalized)	$ 58,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	1,000	-	-	-	-	-	-	-
Operating Supplies	4,200	3,200	4,000	4,200	4,400	4,600	4,900	5,200
Repairs & Maintenance-Equipment	38,800	37,300	50,000	30,400	31,300	32,200	33,100	34,100
Repairs & Maintenance-Facilities	80,000	62,200	80,000	29,300	29,800	30,300	30,800	51,300
4.3 Contractual Services	**23,000**	**22,200**	**-**	**-**	**-**	**-**	**-**	**-**
5.2 Shared Services	**(133,400)**	**(133,400)**	**(6,400)**	**(74,900)**	**(76,400)**	**(77,900)**	**(83,800)**	**(105,600)**
897600 - Wastewater System Operations Unallocated	**$ 1,161,500**	**$ -**	**$ 2,440,500**	**$ 3,264,900**	**$ 3,976,300**	**$ 7,050,800**	**$ 7,636,600**	**$ 8,696,600**
7.0 Unallocated Reserve	**1,161,500**	**-**	**2,440,500**	**3,264,900**	**3,976,300**	**7,050,800**	**7,636,600**	**8,696,600**
Grand Total	**$120,955,500**	**$107,400,000**	**$ 114,985,700**	**$117,758,700**	**$120,139,900**	**$122,569,400**	**$125,048,200**	**$127,609,600**

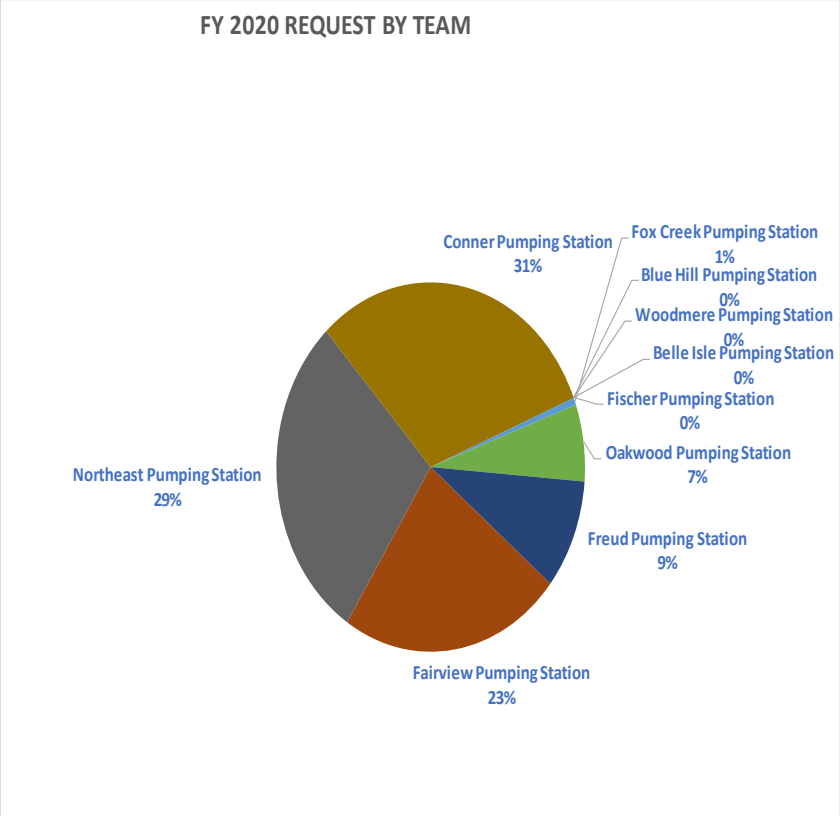
Highlights

The Wastewater Operations Area (*Pumping (Lift) Stations only*) strategic initiatives include:

- **Maximize pumping reliability**
  Regularly scheduled preventive maintenance is necessary and required to maintain the condition of all pumping (lift) stations
- **Minimize energy usage**
  Energy consumption is dependent on flow rate, total pressure, climate (more intense rainfall) and overall pump efficiency. Energy can be minimized through proper preventive maintenance in order to maintain the condition of all pumping (lift) stations.

Organization

The GLWA Wastewater Operations Pumping (Lift) Stations are facilities designed to move wastewater from lower to higher elevation, particularly where the elevation of the source is not sufficient for gravity flow and/or when the use of gravity conveyance will result in excessive excavation depths and high sewer construction costs.

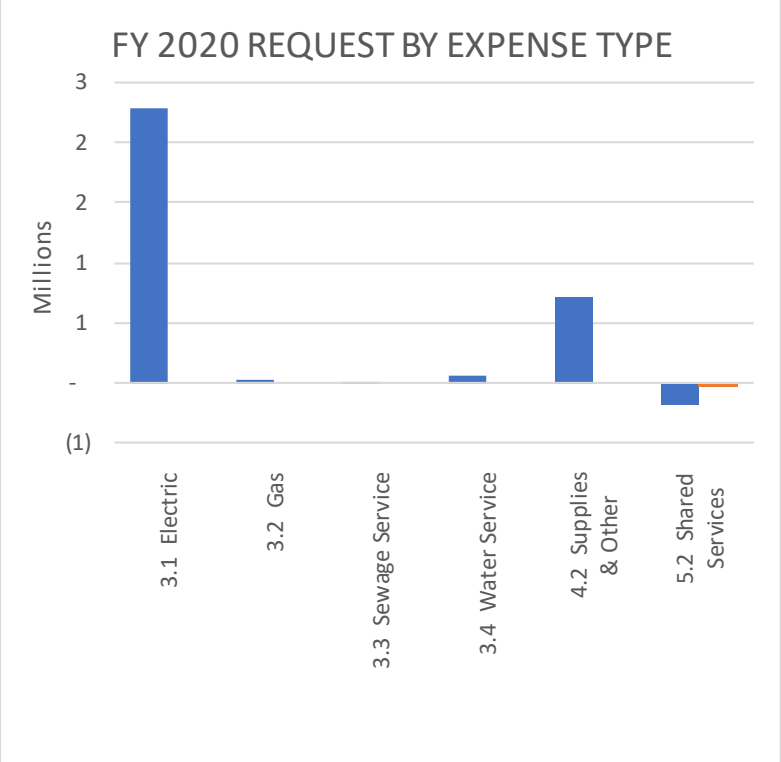


Expense Categories

There is one major category of expenses in the Wastewater Operations pumping stations Operations and Maintenance Budget as listed below.

- Utilities - Electric

Utilities - Electric is the highest expense category for Wastewater Operations pumping (lift) stations. Increased water demand leads to increased energy consumption in order to transport enough safe drinking water to the GLWA's communities.



Biennial Budget Request

The biennial reflects a decrease in FY 2020 as a result of energy consumption being dependent on flow rate, total pressure, climate (more intense rainfall), and overall pump efficiency.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
3.1 Electric	$ 2,434,000	$ 2,109,800	$ 2,508,000	$ 2,291,300	$ (216,700)	-8.6%	$ 2,317,600
3.2 Gas	47,000	16,500	19,000	28,300	9,300	48.9%	28,700
3.3 Sewage Service	27,000	7,300	26,200	11,200	(15,000)	-57.3%	11,200
3.4 Water Service	50,000	27,400	65,000	66,300	1,300	2.0%	67,600
4.1 Chemicals	-	-	-	-	-	N/A	-
4.2 Supplies & Other	676,000	553,200	715,000	706,800	(8,200)	-1.1%	714,800
4.3 Contractual Services	-	-	-	-	-	N/A	-
5.2 Shared Services	(83,300)	(83,300)	-	(177,300)	(177,300)	N/A	(180,800)
Grand Total	$ 3,150,700	$ 2,630,900	$ 3,333,200	$ 2,926,600	$ (406,600)	-12.2%	$ 2,959,100

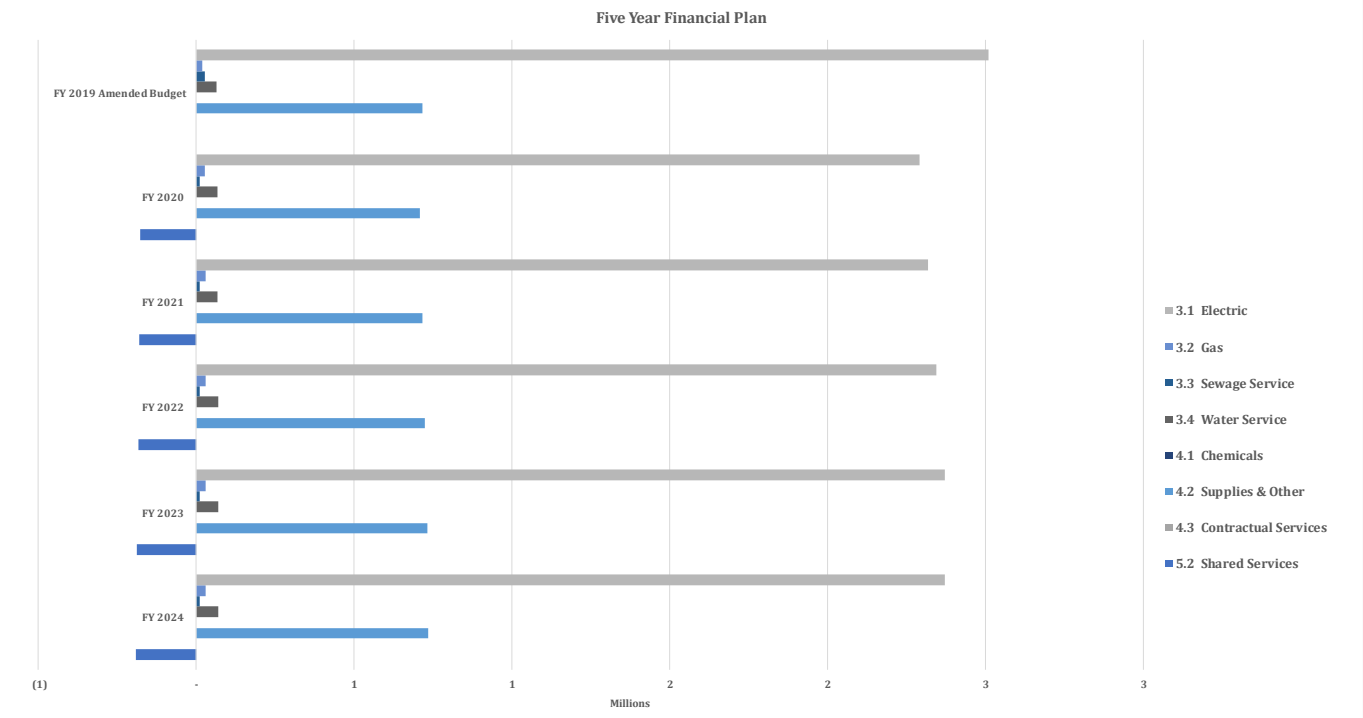
Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Pumping (Lift) Stations (Wastewater Only)	$ 3,150,700	$ 2,630,900	$ 3,333,200	$ 2,926,600	$ (406,600)	-12.2%	$ 2,959,100
Belle Isle Pumping Station	44,200	-	80,000	-	(80,000)	-100.0%	-
Blue Hill Pumping Station	8,500	-	80,000	-	(80,000)	-100.0%	-
Brennan Pools Pumping Station	-	-	-	-	-	N/A	-
Conner Pumping Station	887,000	831,900	897,000	899,400	2,400	0.3%	916,900
Fairview Pumping Station	685,000	616,100	571,000	680,200	109,200	19.1%	690,400
Fischer Pumping Station	(6,000)	-	40,000	-	(40,000)	-100.0%	-
Fox Creek Pumping Station	15,000	1,500	18,200	18,500	300	1.6%	18,900
Freud Pumping Station	295,000	223,300	356,000	281,600	(74,400)	-20.9%	282,200
Northeast Pumping Station	1,036,000	792,200	1,018,000	850,000	(168,000)	-16.5%	850,000
Oakwood Pumping Station	193,000	165,900	193,000	196,900	3,900	2.0%	200,700
Woodmere Pumping Station	(7,000)	-	80,000	-	(80,000)	-100.0%	-
Grand Total	$ 3,150,700	$ 2,630,900	$ 3,333,200	$ 2,926,600	$ (406,600)	-12.2%	$ 2,959,100

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
3.1 Electric	$ 2,508,000	$ 2,291,300	$ (216,700)	-8.6%	$ 2,317,600	$ 2,343,900	$ 2,370,200	$ 2,370,200
3.2 Gas	19,000	28,300	9,300	48.9%	28,700	29,100	29,500	29,500
3.3 Sewage Service	26,200	11,200	(15,000)	-57.3%	11,200	11,300	11,300	11,300
3.4 Water Service	65,000	66,300	1,300	2.0%	67,600	68,900	70,200	70,200
4.1 Chemicals	-	-	-	N/A	-	-	-	-
4.2 Supplies & Other	715,000	706,800	(8,200)	-1.1%	714,800	722,800	730,900	734,800
4.3 Contractual Services	-	-	-	N/A	-	-	-	-
5.2 Shared Services	-	(177,300)	(177,300)	N/A	(180,800)	(184,300)	(187,900)	(191,800)
Grand Total	$ 3,333,200	$ 2,926,600	$ (406,600)	-12.2%	$ 2,959,100	$ 2,991,700	$ 3,024,200	$ 3,024,200



Five-Year Financial Plan by Team

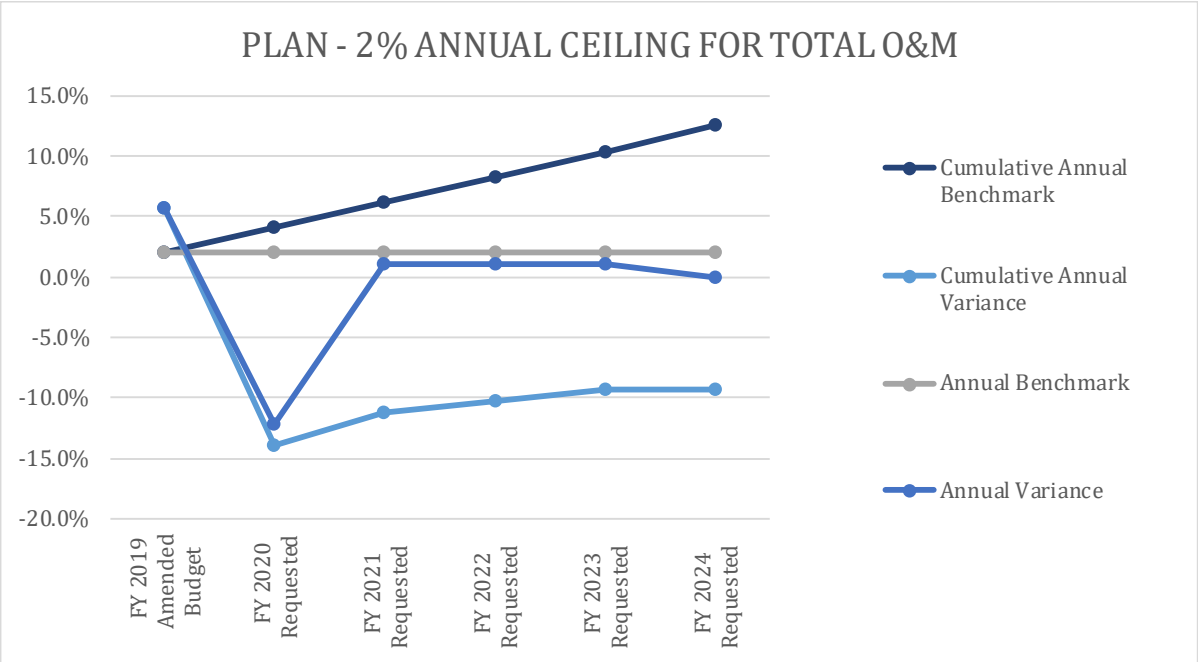
Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Belle Isle Pumping Station	$ 80,000	$ -	$ (80,000)	-100.0%	$ -	$ -	$ -	$ -
Blue Hill Pumping Station	80,000	-	(80,000)	-100.0%	-	-	-	-
Brennan Pools Pumping Station	-	-	-	N/A	-	-	-	-
Conner Pumping Station	897,000	899,400	2,400	0.3%	916,900	934,300	951,800	951,800
Fairview Pumping Station	571,000	680,200	109,200	19.1%	690,400	700,600	710,800	710,800
Fischer Pumping Station	40,000	-	(40,000)	-100.0%	-	-	-	-
Fox Creek Pumping Station	18,200	18,500	300	1.6%	18,900	19,300	19,700	19,700
Freud Pumping Station	356,000	281,600	(74,400)	-20.9%	282,200	282,900	283,500	283,500
Northeast Pumping Station	1,018,000	850,000	(168,000)	-16.5%	850,000	850,000	850,000	850,000
Oakwood Pumping Station	193,000	196,900	3,900	2.0%	200,700	204,600	208,400	208,400
Woodmere Pumping Station	80,000	-	(80,000)	-100.0%	-	-	-	-
Grand Total	$ 3,333,200	$ 2,926,600	$ (406,600)	-12.2%	$ 2,959,100	$ 2,991,700	$ 3,024,200	$ 3,024,200

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Wastewater Operations pumping (lift) stations Group's financial plan reflects a Five Year Overall decrease of 9.3% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".

This decrease is not unexpected given the consistency of these major initiatives. And while there is a decreased expense in the short-term, it is believed that this is the result of realigning the expenses

to reflect current energy consumption which is dependent on flow rate, total pressure, climate (more intense rainfall), and overall pump efficiency. The realignment will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

[Will be presented with January 2019 update]

Capital Outlay

[Currently not a component of this group]

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in report order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
892342 - Belle Isle Pumping Station	$ 44,200	$ -	$ 80,000	$ -	$ -	$ -	$ -	$ -
4.2 Supplies & Other	73,000	28,800	80,000	55,300	56,400	57,500	58,700	59,900
Repairs & Maintenance-Equipment	73,000	28,800	80,000	55,300	56,400	57,500	58,700	59,900
5.2 Shared Services	(28,800)	(28,800)	-	(55,300)	(56,400)	(57,500)	(58,700)	(59,900)
892343 - Blue Hill Pumping Station	8,500	-	80,000	-	-	-	-	-
4.2 Supplies & Other	50,000	41,500	80,000	74,000	75,500	77,000	78,500	80,100
Repairs & Maintenance-Equipment	50,000	41,500	80,000	74,000	75,500	77,000	78,500	80,100
5.2 Shared Services	(41,500)	(41,500)	-	(74,000)	(75,500)	(77,000)	(78,500)	(80,100)
892345 - Conner Pumping Station	887,000	831,900	897,000	899,400	916,900	934,300	951,800	951,800
3.1 Electric	700,000	687,300	700,000	714,000	728,000	742,000	756,000	756,000
3.2 Gas	2,000	300	2,000	2,000	2,100	2,100	2,200	2,200
3.3 Sewage Service	25,000	7,200	25,000	10,000	10,000	10,000	10,000	10,000
3.4 Water Service	10,000	10,000	20,000	20,400	20,800	21,200	21,600	21,600
4.2 Supplies & Other	150,000	127,100	150,000	153,000	156,000	159,000	162,000	162,000
Repairs & Maintenance-Equipment	150,000	127,100	150,000	153,000	156,000	159,000	162,000	162,000
892346 - Fairview Pumping Station	685,000	616,100	571,000	680,200	690,400	700,600	710,800	710,800
3.1 Electric	500,000	446,300	500,000	510,000	520,000	530,000	540,000	540,000
3.2 Gas	15,000	9,700	1,000	10,000	10,000	10,000	10,000	10,000
3.4 Water Service	10,000	8,900	10,000	10,200	10,400	10,600	10,800	10,800
4.2 Supplies & Other	160,000	151,200	60,000	150,000	150,000	150,000	150,000	150,000
Repairs & Maintenance-Equipment	160,000	151,200	60,000	150,000	150,000	150,000	150,000	150,000
892347 - Fischer Pumping Station	(6,000)	-	40,000	-	-	-	-	-
4.2 Supplies & Other	-	6,000	40,000	12,000	12,200	12,400	12,600	12,900
Repairs & Maintenance-Equipment	-	6,000	40,000	12,000	12,200	12,400	12,600	12,900
5.2 Shared Services	(6,000)	(6,000)	-	(12,000)	(12,200)	(12,400)	(12,600)	(12,900)
892348 - Fox Creek Pumping Station	15,000	1,500	18,200	18,500	18,900	19,300	19,700	19,700
3.1 Electric	3,000	1,400	2,000	2,000	2,100	2,100	2,200	2,200
3.3 Sewage Service	2,000	100	1,200	1,200	1,200	1,300	1,300	1,300
3.4 Water Service	10,000	-	15,000	15,300	15,600	15,900	16,200	16,200
892349 - Freud Pumping Station	295,000	223,300	356,000	281,600	282,200	282,900	283,500	283,500
3.1 Electric	175,000	162,700	250,000	200,000	200,000	200,000	200,000	200,000
3.2 Gas	30,000	6,500	16,000	16,300	16,600	17,000	17,300	17,300
3.4 Water Service	15,000	8,500	15,000	15,300	15,600	15,900	16,200	16,200
4.2 Supplies & Other	75,000	45,600	75,000	50,000	50,000	50,000	50,000	50,000
Repairs & Maintenance-Equipment	75,000	45,600	75,000	50,000	50,000	50,000	50,000	50,000
892350 - Northeast Pumping Station	1,036,000	792,200	1,018,000	850,000	850,000	850,000	850,000	850,000
3.1 Electric	943,000	699,300	943,000	750,000	750,000	750,000	750,000	750,000
4.2 Supplies & Other	93,000	92,900	75,000	100,000	100,000	100,000	100,000	100,000
Repairs & Maintenance-Equipment	93,000	92,900	75,000	100,000	100,000	100,000	100,000	100,000
892351 - Oakwood Pumping Station	193,000	165,900	193,000	196,900	200,700	204,600	208,400	208,400
3.1 Electric	113,000	112,800	113,000	115,300	117,500	119,800	122,000	122,000
3.4 Water Service	5,000	-	5,000	5,100	5,200	5,300	5,400	5,400
4.2 Supplies & Other	75,000	53,100	75,000	76,500	78,000	79,500	81,000	81,000
Repairs & Maintenance-Equipment	75,000	53,100	75,000	76,500	78,000	79,500	81,000	81,000
4.3 Contractual Services	-	-	-	-	-	-	-	-
Contractual Professional Services	-	-	-	-	-	-	-	-
892352 - Woodmere Pumping Station	(7,000)	-	80,000	-	-	-	-	-
4.2 Supplies & Other	-	7,000	80,000	36,000	36,700	37,400	38,100	38,900
Repairs & Maintenance-Equipment	-	7,000	80,000	36,000	36,700	37,400	38,100	38,900
5.2 Shared Services	(7,000)	(7,000)	-	(36,000)	(36,700)	(37,400)	(38,100)	(38,900)
Grand Total	$ 3,150,700	$ 2,630,900	$ 3,333,200	$ 2,926,600	$ 2,959,100	$ 2,991,700	$ 3,024,200	$ 3,024,200

Highlights

The Planning Services Area presently is leading GLWA with several strategic initiatives.

The following tables outline the initiatives for the Water System, Wastewater System and Both Systems, GLWA wide. Budget values beyond contract end date shown are for updates or implementation of the program. Procurement of these services would require a separate procurement process.

Water System Programs:

- **Transmission System Pipe Integrity Program:** To assess the risk to water delivery infrastructure through the physical review of the system as well as assessing member reliability.
- **Water Master Plan Update:** An update to this plan that is forecast to occur periodically ensuring GLWA continues to meet the needs of its members.
- **Units of Service for Non-Master Meter Members of Great Lakes Water Authority and System Water Audit:** An analytical review data to quantify flow volumes for members who have historically not had master meters.

Water System	Transmission System Pipe Integrity Program (TSIP)	Water Master Plan Update	Units of Service for Non-Master Meter Customers…	Total
Prime Consultant	To be Determined	To be Determined	Black & Veatch	
Contract #	To be Determined	To be Determined	GLWA-CS-039	
Contract Amount	n/a	n/a	$ 1,300,740	$ 1,300,740
Contract End Date	n/a	n/a	1/31/2019	
Cost Center Name	Asset Management	Systems Planing	Systems Analytics	
Pre-FY 2018 Spend			108,936	$ 108,936
FY 2018			632,105	$ 632,105
FY 2019 Budget			495,040	$ 495,040
FY 2020 Estimate	2,063,488			$ 2,063,488
FY 2021 Estimate	2,194,643	850,000		$ 3,044,643
FY 2022 Estimate	5,741,150	1,000,000		$ 6,741,150
FY 2023 Estimate	7,201,350			$ 7,201,350
FY 2024 Estimate	8,380,334		500,000	$ 8,880,334
Post-FY 2024 Contract Completion	ongoing			$ -
Total	$ 25,580,965	$ 1,850,000	$ 1,736,081	$ 29,167,046

Wastewater System Programs:

- **Wastewater Master Plan**: To maximize the use of existing GLWA and member facilities through the review of collection and treatment facilities in order to produce affordable solutions.

Wastewater System Programs (Continued)

- **Good Sewer Metering Practice Analysis & Support:** The ongoing program in support of the Wastewater Analytics Task Force (WATF) and consists of four core elements: metering, sewer shares analysis and review, collection system initiative, and Water Resource Recovery Facility initiatives.
- **Meter Dye Testing:** A program to review and ensure the accuracy of the sewer meters through repair and calibration.
- **Professional and Technical Sewer Support Services:** A program for the calibration, corrective maintenance and emergency repair of sewer meters in the collection system. This program also covers the installation of control cabinets and programmable controllers at various locations throughout the collection system.
- **Sewer Shares Update – Sampling and Consulting:** A program, working with the member communities, to quantify pollutants entering the wastewater collection system and the associated impact of treatment at the Water Resource Recovery Facility.
- **Collection System Modelling and Monitoring:** A program for the collection, analysis and modelling of date to create alternative control strategies in the wastewater collection system.
- **CSO Condition Assessment, Calibration and Preventative Maintenance:** A program to assess the condition, calibrate, and maintain various meters in each of the Combined Sewer Overflow (CSO) facilities.

Wastewater System	Wastewater Master Plan & Update	Good Sewer Metering Practice Analysis & Support	Meter Dye Testing	Professional and Tehchincal Sewer Support Services	Sewer Shares Update - Sampling and Consulting	Collection System Modeling and Monitoring	CSO Condition Assessment, Calibration & Preventative Maintenance	Total
Prime Consultant	CDM Smith	CDM Smith	Applied Science	PCI LLC	To be Determined	To be Determined	To be Determined	
Contract #	GLWA-CS-036	GLWA-CS-239	GLWA-CS-236	GLWA-CON-179	To be Determined	To be Determined	To be Determined	
Contract Amount	$ 8,320,876	$ 2,420,906	$ 1,435,054	$ 4,965,840	Not Determined	Not Determined	Not Determined	$ 17,142,676
Contract End Date	01/31/20	06/15/21	02/28/20	07/02/22	Not Determined	Not Determined	Not Determined	
Cost Center Name	Systems Planning	Systems Analytics	Systems Analytics	Systems Analytics	Systems Analytics	Systems Analytics	Systems Analytics	
Pre-FY 2018 Spend	441,374	566,172	620,633	151,143				$ 1,779,322
FY 2018	3,011,162	280,291	659,509	989,330		392,411		$ 5,332,703
FY 2019 Budget	3,235,000	800,000	675,000	655,380	991,400			$ 6,356,780
FY 2020 Estimate	760,000	816,000	875,000	655,380	500,000	1,542,120	470,000	$ 5,618,500
FY 2021 Estimate	-	832,320	675,000	655,380		1,255,000	470,000	$ 3,887,700
FY 2022 Estimate	-	848,970	875,000	655,380	500,000		470,000	$ 3,349,350
FY 2023 Estimate	-	865,945	675,000	655,380	250,000		470,000	$ 2,916,325
FY 2024 Estimate	500,000	883,260	875,000	655,380			470,000	$ 3,383,640
Post-FY 2024 Contract Completion	-	ongoing	ongoing	ongoing			ongoing	$ -
Total	$ 7,947,536	$ 5,892,958	$ 5,930,142	$ 5,072,753	$ 2,241,400	$ 3,189,531	$ 2,350,000	$ 32,624,320

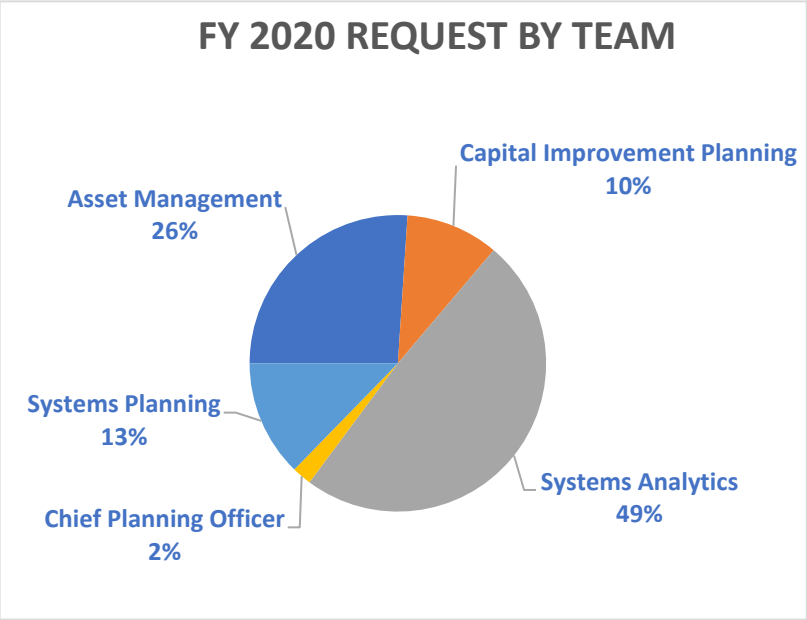
Both Systems (GLWA Wide) Initiatives

- **Strategic Asset Management Plan (SAMP)**: To identify the timing related to key initiatives, identify how asset management related information is used to drive prudent CIP expenditures and provide a long-term, 10-year, roadmap to execute various asset management initiatives
- **Capital Program Management:** A program to develop a long-term strategy for the development, coordination and execution of the Capital Improvement Program through various strategies, including the development of a Project Management Office.
- **Computerized Maintenance System Support:** Support services for the computer package that allows GLWA to manage the maintenance of equipment and facilities throughout the water and wastewater systems.
- **Modelling, Sampling and Engineering Services:** Services to be engaged in support of the various initiatives that may be outside the scope of the original project.

Both Systems	Strategic Asset Management Plan (SAMP)	Capital Program Management	CMMS System Support	Modeling and Sampling Engineering Services	Total
Prime Consultant	Jacobs Engineering	To be Determined	Experis Finanaical	To be Determined	
Contract #	GLWA-CS-198	GLWA-CS-272	PO 3678	To be Determined	
Contract Amount	$ 4,113,267	Not Determined	$ 320,000 Annually	n/a	$ 4,433,267
Contract End Date	06/15/21	Not Determined	08/25/19	n/a	
Cost Center Name	Asset Management	Capital Improvement Planning	Asset Management	Planning Services	
Pre-FY 2018 Spend	-	-	289,255		$ 289,255
FY 2018	50,000	-	294,684		$ 344,684
FY 2019 Budget	1,327,000	172,250	320,000	319,780	$ 2,139,030
FY 2020 Estimate	1,208,000	1,320,000	320,000	100,000	$ 2,948,000
FY 2021 Estimate	936,000	1,320,000	320,000	101,200	$ 2,677,200
FY 2022 Estimate	1,000,000	770,000	320,000	102,400	$ 2,192,400
FY 2023 Estimate	1,000,000	1,640,625	150,000	103,600	$ 2,894,225
FY 2024 Estimate	1,000,000	1,674,300	150,000	104,800	$ 2,929,100
Post-FY 2024 Contract Completion			-	ongoing	$ -
Total	$ 6,521,000	$ 6,897,175	$ 2,163,939	$ 831,780	$ 16,413,894

Organization

The GLWA System Planning Area consists of five teams.

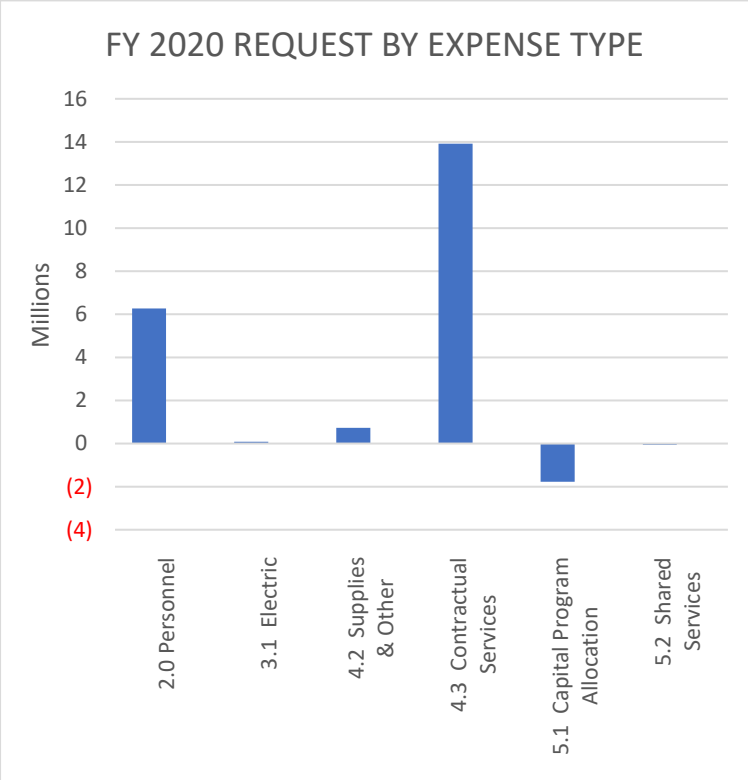


- **Office of the Chief Planning Officer** – administration and oversight of GLWA's planning efforts
- **Asset Management** – responsible for leading the asset management strategy at GLWA
- **Systems Planning** – responsible for internal and external strategic planning, outreach and coordination with customer communities
- **Capital Improvement Planning** – manages the planning and execution of the capital improvement plan
- **Systems Analytics** – responsible for maintaining meter operations and analyzing flow data for both water and wastewater

Expense Categories

There are two major categories of Planning Services Area expenses in the Operations and Maintenance Budget as listed below.

- Contractual services
- Personnel Costs



In addition to the strategic initiatives noted above, the Planning Services Area also sponsors the third-party consultant, Bridgeport, who ensures that GLWA Member Partners are engaged in decision making that affects the region today and in the future.

The Planning Services Area has been in existence for nearly four years. Given the breadth of assignments, recruiting and retaining top talent is a high priority. Accordingly, personnel is the second highest expense category. It is expected that a portion of the daily activities of the Planning Services Area will grow to have a more direct impact on capital delivery either through staff or via an upcoming selection of a capital program management firm. To the extent that occurs, an allocation of this Area's effort will be assigned to construction work-in-progress.

Biennial Budget Request

The biennial reflects an increase in FY 2020 as a result of the ramp up of the strategic initiatives defined above.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	4,940,900	4,062,500	5,152,700	1,481,894	6,272,400	1,119,700	21.7%	6,659,500
3.1 Electric	67,900	68,000	110,400	17,360	80,500	(29,900)	-27.1%	81,700
4.2 Supplies & Other	1,206,600	1,256,500	544,400	215,997	726,400	182,000	33.4%	649,800
4.3 Contractual Services	8,421,300	8,421,400	11,995,400	3,151,856	13,918,400	1,923,000	16.0%	12,840,900
5.1 Capital Program Allocation	-	-	(1,931,000)	-	(1,776,200)	154,800	-8.0%	(1,811,800)
5.2 Shared Services	(220,000)	(220,000)	(357,500)	(156,492)	(60,000)	297,500	-83.2%	-
Grand Total	$ 14,416,700	$ 13,588,400	$ 15,514,400	$ 4,710,614	$ 19,161,500	$ 3,647,100	23.5%	$ 18,420,100

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Asset Management	$ 1,711,300	$ 1,711,200	$ 2,534,800	$ 826,611	$ 4,990,100	$ 2,455,300	96.9%	$ 4,766,000
Capital Improvement Planning	-	-	693,000	3,571	1,943,900	1,250,900	180.5%	2,171,700
Chief Planning Officer	886,600	886,700	390,600	164,925	408,900	18,300	4.7%	525,000
Energy Management	196,400	196,200	-	-	-	-	#DIV/0!	-
Systems Analytics	7,335,800	6,497,400	7,501,800	1,946,139	9,385,500	1,883,700	25.1%	8,299,200
Systems Planning	4,286,600	4,286,600	4,394,200	1,769,369	2,433,100	(1,961,100)	-44.6%	2,658,200
Grand Total	$ 14,416,700	$ 13,578,100	$ 15,514,400	$ 4,710,614	$ 19,161,500	$ 3,647,100	23.5%	$ 18,420,100

Personnel Budget

The staffing plan (Table 1 on the following page) provides for a steady state of 71 positions as of FY 2021. These positions are forecast to be filled by FY 2023 as Planning Services levels out its staffing requirements.

1. *Staffing Plan – Number of Positions* - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	**FY 2018 Staffing Plan**	**FY 2019 Staffing Plan**	**FY 2020 Staffing Plan**	**FY 2021 Staffing Plan**	**FY 2022 Staffing Plan**	**FY 2023 Staffing Plan**	**FY 2024 Staffing Plan**
Planning Services	**68.00**	**62.00**	**70.00**	**71.00**	**71.00**	**71.00**	**71.00**
Chief Planning Officer	5.00	3.00	3.00	3.00	3.00	3.00	3.00
Systems Planning	4.00	4.00	7.00	8.00	8.00	8.00	8.00
Asset Management	9.00	7.00	9.00	9.00	9.00	9.00	9.00
Energy Management	3.00	0.00	0.00	0.00	0.00	0.00	0.00
Systems Analytics	39.00	40.00	43.00	43.00	43.00	43.00	43.00
Capital Improvement Planning	8.00	8.00	8.00	8.00	8.00	8.00	8.00

2. *Full Time Equivalents* - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs project an increase over the next five years.

Full Time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	**FY 2018 Approved FTEs**	**FY 2019 Approved FTE's**	**FY 2020 FTE's**	**FY 2021 FTE's**	**FY 2022 FTE's**	**FY 2023 FTE's**	**FY 2024 FTE's**
Planning Services	**63.50**	**60.25**	**64.25**	**68.50**	**70.00**	**71.00**	**71.00**
Chief Planning Officer	4.50	3.00	2.00	3.00	3.00	3.00	3.00
Systems Planning	3.25	4.00	6.00	7.00	7.25	8.00	8.00
Asset Management	8.00	7.00	9.00	9.00	9.00	9.00	9.00
Energy Management	2.75	0.00	0.00	0.00	0.00	0.00	0.00
Systems Analytics	39.00	40.00	43.00	43.00	43.00	43.00	43.00
Capital Improvement Planning	6.00	6.25	4.25	6.50	7.75	8.00	8.00

3. *Personnel Budget* – The table below presents the Planning Services personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits and Contractual Transition Services. These values are based on the *Full Time Equivalents* in table 2.

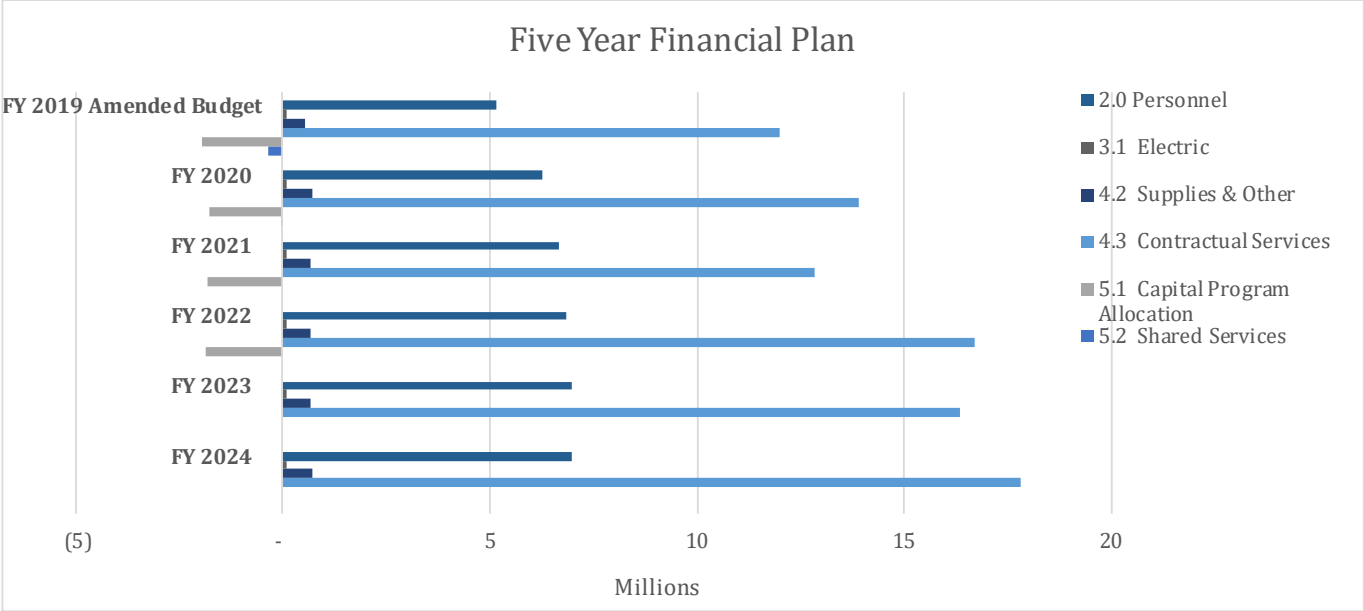
Personnel Budget

Team	**FY 2019 Amended Budget**	**FY 2020 Department Requested**	**FY 2021 Department Requested**	**FY 2022 Department Requested**	**FY 2023 Department Requested**	**FY 2024 Department Requested**
Chief Planning Officer	344,100	292,000	355,800	357,300	358,800	360,300
Systems Planning	411,100	588,700	680,900	712,400	801,400	804,900
Asset Management	892,000	1,111,800	1,116,500	1,121,100	1,125,700	1,130,400
Systems Analytics	2,812,500	3,780,500	3,792,300	3,807,200	3,822,000	3,836,900
Capital Improvement Planning	693,000	499,400	714,000	829,700	854,100	857,700
Grand Total	**$5,152,700**	**$6,272,400**	**$6,659,500**	**$6,827,700**	**$6,962,000**	**$6,990,200**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 5,152,700	$ 6,272,400	$ 1,119,700	21.7%	$ 6,659,500	6,827,700	6,962,000	6,990,200
3.1 Electric	110,400	80,500	(29,900)	-27.1%	$ 81,700	82,000	82,200	82,400
4.2 Supplies & Other	544,400	726,400	182,000	33.4%	$ 649,800	649,300	673,400	697,900
4.3 Contractual Services	11,995,400	13,918,400	1,923,000	16.0%	$ 12,840,900	16,721,200	16,360,500	17,795,700
5.1 Capital Program Allocation	(1,931,000)	(1,776,200)	154,800	-8.0%	$ (1,811,800)	(1,848,000)	-	-
5.2 Shared Services	(357,500)	(60,000)	297,500	-83.2%	$ -	-	-	-
Grand Total	$ 15,514,400	$ 19,161,500	$ 3,647,100	23.5%	$ 18,420,100	$ 22,432,200	$ 24,078,100	$ 25,566,200



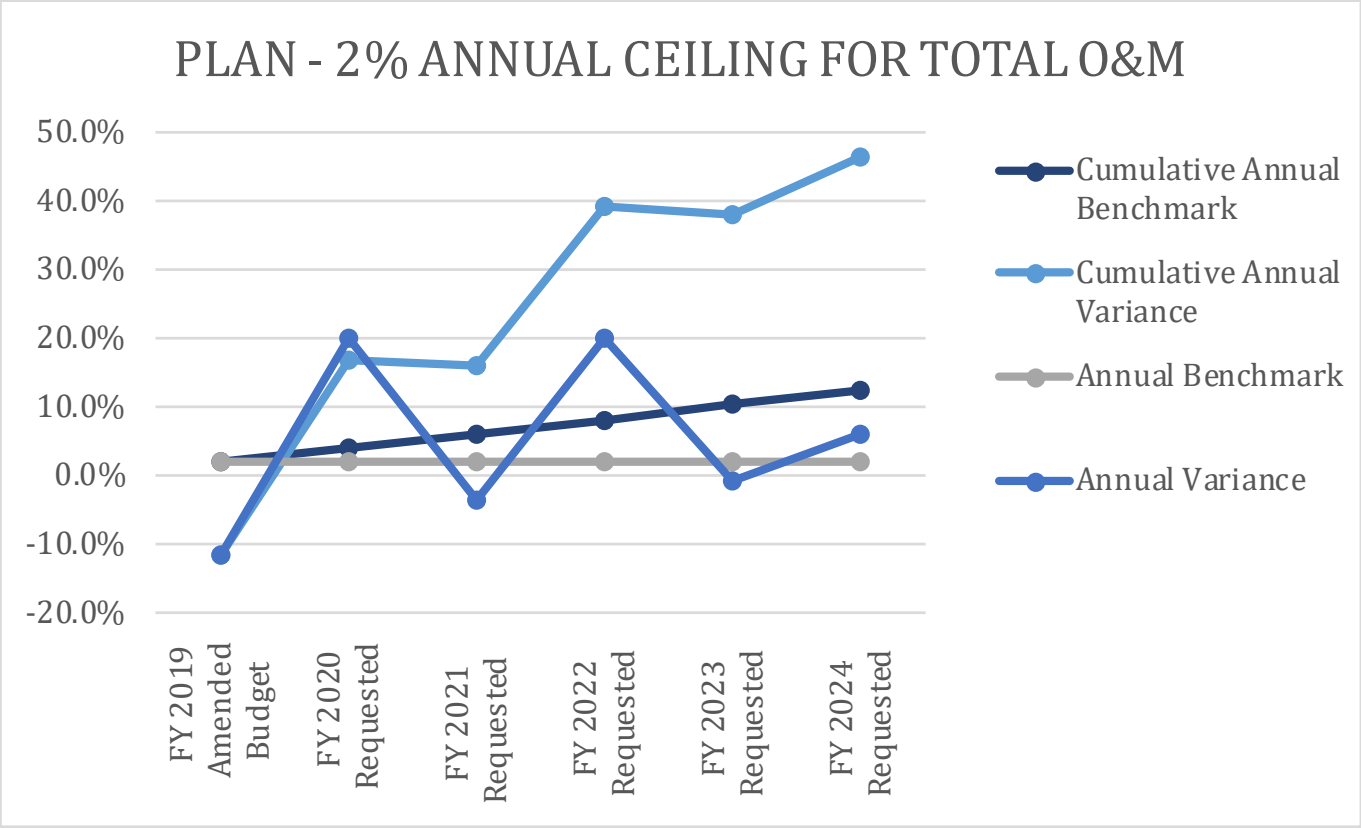
Five-Year Financial Plan by Team

Row Labels	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Asset Management	$ 2,534,800.00	$ 4,990,100.00	$ 2,455,300.00	96.9%	$ 4,766,000	$ 8,397,500	$ 9,915,700	$ 11,133,400
Capital Improvement Planning	693,000	1,943,900	1,250,900	180.5%	2,171,700	1,742,200	2,640,200	2,680,000
Chief Planning Officer	390,600	408,900	18,300	4.7%	525,000	523,100	527,000	527,700
Systems Analytics	7,501,800	9,385,500	1,883,700	25.1%	8,299,200	8,914,300	8,535,800	8,647,300
Systems Planning	4,394,200	2,433,100	(1,961,100)	-44.6%	2,658,200	2,855,100	2,459,400	2,577,800
Grand Total	$ 15,514,400	$ 19,161,500	$ 3,647,100	23.5%	$ 18,420,100	$ 22,432,200	$ 24,078,100	$ 25,566,200

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Planning Services Area financial plan reflects a Five Year Overall increase of 46.5% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".

This increase is not unexpected given the ramp-up of these major initiatives. And while there is an increased expense in the short-term, it is believed that the implementation of the capital asset management plan and capital delivery program will result in a more effective utility in the long-run to better manage the use of resources.



Effective Utility Management Measures

open for 1.2019 revised draft

Capital Outlay

Planning Services capital outlay is funded by both the O&M budget and the I&E budget. The largest component of this plan is an ongoing program to upgrade meters throughout the GLWA water and wastewater systems.

Capital Outlay

Asset Categories	2020 Department Requested	2021 Department Requested	2022 Department Requested	2023 Department Requested	2024 Department Requested
Flow Measuring & Meters	1,800,600	1,815,000	1,157,000	1,125,940	1,125,000
Furniture & Fixtures	276,000				
Leasehold Improvements	260,000				
Passenger Vehicles	25,000		28,000		26,000
Tools, Shop & Warehouse		38,574			39,744
Grand Total	$2,361,600	$1,853,574	$1,185,000	$1,125,940	$1,190,744

Capital Outlay by Funding Source

Funding Source	2020 Department Requested	2021 Department Requested	2022 Department Requested	2023 Department Requested	2024 Department Requested
I&E	2,361,600	1,853,574	1,185,000	1,125,940	1,190,744
Grand Total	$2,361,600	$1,853,574	$1,185,000	$1,125,940	$1,190,744

Capital Outlay by Team

Team	2020 Department Requested	2021 Department Requested	2022 Department Requested	2023 Department Requested	2024 Department Requested
Systems Planning	336,000				
Asset Mangement	110,000		28,000		
Systems Analytics	1,800,600	1,853,574	1,157,000	1,125,940	1,164,744
Capital Improvement Planning	115,000				26,000
Grand Total	$2,361,600	$1,853,574	$1,185,000	$1,125,940	$1,190,744

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins below. The expenses are listed in alphabetical order by cost center.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
886001 - Chief Planning Officer	**$ 886,600**	**$ 886,700**	**$ 390,600**	**$ 408,900**	**$ 525,000**	**$ 523,100**	**$ 527,000**	**$ 527,700**
2.1 Salaries & Wages	**315,300**	**315,300**	**268,600**	**232,600**	**277,300**	**277,300**	**277,300**	**277,300**
2.3 Overtime	**600**	**600**	**800**	**-**	**1,300**	**1,300**	**1,300**	**1,300**
2.4 Employee Benefits	**67,300**	**67,900**	**74,700**	**59,400**	**77,200**	**78,700**	**80,200**	**81,700**
4.2 Supplies & Other	**420,400**	**423,100**	**46,500**	**16,400**	**18,700**	**15,300**	**17,700**	**16,900**
Capital Outlay less than $5,000	-	-	34,900	2,000	2,000	2,000	2,000	2,000
Memberships, Licenses & Subscriptions	404,200	409,800	500	600	600	600	600	600
Mileage and Parking	200	200	200	200	200	200	200	200
Office Supplies	2,300	1,300	2,000	2,100	2,200	2,300	2,400	2,500
Postage	-	-	-	-	-	-	-	-
Training and Internal Meetings	6,400	3,500	3,800	3,500	3,600	3,800	3,900	4,700
Travel	7,300	6,300	5,100	6,000	8,100	6,400	8,600	6,900
Tuition Refund	-	2,000	-	2,000	2,000	-	-	-
4.3 Contractual Services	**83,000**	**79,800**	**-**	**100,500**	**150,500**	**150,500**	**150,500**	**150,500**
Contractual Operating Services	1,000	500	-	500	500	500	500	500
Contractual Professional Services	82,000	79,300	-	100,000	150,000	150,000	150,000	150,000
886101 - Systems Planning	**$ 4,286,600**	**$ 4,286,600**	**$ 4,394,200**	**$ 2,433,100**	**$ 2,658,200**	**$ 2,855,100**	**$ 2,459,400**	**$ 2,577,800**
2.1 Salaries & Wages	**228,800**	**228,900**	**317,500**	**452,600**	**518,800**	**540,900**	**607,200**	**607,200**
2.3 Overtime	**-**	**-**	**1,600**	**2,900**	**4,500**	**4,500**	**4,500**	**4,500**
2.4 Employee Benefits	**56,900**	**56,900**	**92,000**	**133,200**	**157,600**	**167,000**	**189,700**	**193,200**
4.2 Supplies & Other	**41,800**	**42,400**	**48,100**	**100,400**	**78,900**	**79,700**	**80,000**	**79,700**
Capital Outlay less than $5,000	-	-	-	26,800	-	-	-	-
Memberships, Licenses & Subscriptions	-	-	-	1,100	1,100	1,100	1,100	1,100
Mileage and Parking	1,200	1,200	1,800	3,600	4,800	4,800	4,800	4,800
Office Supplies	4,000	4,700	5,000	5,300	5,600	5,900	6,200	6,300
Operating Supplies	33,000	32,100	36,000	50,000	50,000	50,000	50,000	50,000
Training and Internal Meetings	-	800	1,600	4,600	5,400	5,900	5,900	5,100
Travel	3,600	3,600	3,700	9,000	12,000	12,000	12,000	12,400
4.3 Contractual Services	**3,959,100**	**3,958,400**	**3,935,000**	**1,744,000**	**1,898,400**	**2,063,000**	**1,578,000**	**1,693,200**
Contractual Professional Services	3,959,100	3,958,400	3,935,000	1,744,000	1,898,400	2,063,000	1,578,000	1,693,200
5.1 Capital Program Allocation	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
886201 - Asset Management	**$ 1,711,300**	**$ 1,711,200**	**$ 2,534,800**	**$ 4,990,100**	**$ 4,766,000**	**$ 8,397,500**	**$ 9,915,700**	**$ 11,133,400**
2.1 Salaries & Wages	**562,600**	**562,500**	**704,200**	**875,800**	**875,800**	**875,800**	**875,800**	**875,800**
2.3 Overtime	**3,700**	**3,500**	**-**	**-**	**-**	**-**	**-**	**-**
2.4 Employee Benefits	**117,000**	**117,200**	**187,800**	**236,000**	**240,700**	**245,300**	**249,900**	**254,600**
2.5 Transition Services	**50,900**	**53,300**	**-**	**-**	**-**	**-**	**-**	**-**
4.2 Supplies & Other	**298,200**	**293,100**	**73,900**	**216,800**	**77,700**	**120,800**	**126,900**	**132,600**
Capital Outlay less than $5,000	25,500	25,500	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	-	-	8,000	-	-	-	-	-
Memberships, Licenses & Subscriptions	1,100	1,000	1,000	1,200	1,200	1,200	1,300	1,300
Mileage and Parking	5,000	5,100	5,200	7,000	7,100	7,300	7,400	7,600
Office Supplies	2,000	6,100	4,000	6,000	6,300	6,600	6,900	7,200
Repairs & Maintenance-Software	235,000	235,000	36,000	180,000	40,000	80,000	85,000	90,000
Training and Internal Meetings	7,100	7,900	7,600	10,800	11,100	12,300	12,500	12,800
Travel	22,500	12,500	12,100	11,800	12,000	13,400	13,800	13,700
4.3 Contractual Services	**678,900**	**681,600**	**3,453,400**	**3,661,500**	**3,571,800**	**7,155,600**	**8,663,100**	**9,870,400**
Contractual Operating Services	253,000	266,300	-	-	-	-	-	-
Contractual Professional Services	425,900	415,300	3,453,400	3,661,500	3,571,800	7,155,600	8,663,100	9,870,400
5.1 Capital Program Allocation	**-**	**-**	**(1,884,500)**	**-**	**-**	**-**	**-**	**-**

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
886301 - Energy Management	**$ 196,400**	**$ 196,200**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
2.1 Salaries & Wages	**41,400**	**41,300**	**-**	**-**	**-**	**-**	**-**	**-**
2.3 Overtime	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2.4 Employee Benefits	**10,700**	**10,400**	**-**	**-**	**-**	**-**	**-**	**-**
2.5 Transition Services	**54,300**	**56,600**	**-**	**-**	**-**	**-**	**-**	**-**
4.2 Supplies & Other	**1,000**	**800**	**-**	**-**	**-**	**-**	**-**	**-**
Memberships, Licenses & Subscriptions	-	-	-	-	-	-	-	-
Mileage and Parking	-	-	-	-	-	-	-	-
Operating Supplies	200	-	-	-	-	-	-	-
Training and Internal Meetings	-	-	-	-	-	-	-	-
Travel	800	800	-	-	-	-	-	-
4.3 Contractual Services	**89,000**	**87,100**	**-**	**-**	**-**	**-**	**-**	**-**
Contractual Professional Services	89,000	87,100	-	-	-	-	-	-
5.1 Capital Program Allocation	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
886401 - Systems Analytics	**$ 7,335,800**	**$ 6,507,700**	**$ 7,501,800**	**$ 9,385,500**	**$ 8,299,200**	**$ 8,914,300**	**$ 8,535,800**	**$ 8,647,300**
2.1 Salaries & Wages	**1,252,800**	**1,252,000**	**1,571,400**	**2,032,400**	**2,032,400**	**2,032,400**	**2,032,400**	**2,032,400**
2.2 Workforce Development	**131,600**	**131,200**	**206,100**	**231,000**	**231,000**	**231,000**	**231,000**	**231,000**
2.3 Overtime	**78,000**	**78,700**	**78,000**	**83,900**	**83,900**	**83,900**	**83,900**	**83,900**
2.4 Employee Benefits	**507,200**	**507,900**	**610,600**	**757,000**	**771,800**	**786,700**	**801,500**	**816,400**
2.5 Transition Services	**1,461,800**	**578,300**	**1,005,800**	**676,200**	**673,200**	**673,200**	**673,200**	**673,200**
2.6 Personnel Transition Adjustment	**-**	**-**	**(659,400)**	**-**	**-**	**-**	**-**	**-**
3.1 Electric	**67,900**	**68,000**	**110,400**	**80,500**	**81,700**	**82,000**	**82,200**	**82,400**
4.2 Supplies & Other	**445,200**	**497,100**	**375,900**	**378,300**	**447,900**	**404,300**	**418,900**	**438,600**
Capital Outlay less than $5,000	277,500	277,600	232,400	230,400	287,300	244,400	256,700	268,800
Capital Outlay over $5k(O&M-Capitalized)	-	54,800	-	-	-	-	-	-
Memberships, Licenses & Subscriptions	1,000	-	-	-	-	-	-	-
Mileage and Parking	1,000	1,500	700	1,600	1,600	1,600	1,600	1,600
Office Supplies	14,300	14,700	15,000	15,300	15,400	15,400	15,400	15,800
Operating Supplies	14,700	14,500	12,900	14,600	14,600	14,600	14,600	15,500
Printing	-	-	-	-	-	-	-	-
Repairs & Maintenance-Equipment	68,200	68,100	60,000	60,600	72,700	73,400	73,100	76,100
Repairs & Maintenance-Hardware	20,800	19,800	14,000	8,300	8,600	9,000	9,400	9,700
Repairs & Maintenance-Miscellaneous	25,400	24,300	24,000	24,400	24,600	24,800	25,000	28,000
Training and Internal Meetings	5,000	4,800	5,000	5,100	5,100	5,100	5,100	5,100
Travel	2,800	2,700	3,000	3,000	3,000	3,000	5,000	5,000
Tuition Refund	1,400	1,400	-	2,000	2,000	-	-	-
Uniforms, Laundry, Cleaning	13,100	12,900	8,900	13,000	13,000	13,000	13,000	13,000
4.3 Contractual Services	**3,611,300**	**3,614,500**	**4,607,000**	**5,206,200**	**3,977,300**	**4,620,800**	**4,212,700**	**4,289,400**
Contract Services-Information Technology	698,700	703,400	812,000	611,700	582,600	583,500	585,400	585,800
Contractual Operating Services	2,219,000	2,279,000	3,300,000	4,594,500	3,394,700	4,037,300	3,627,300	3,703,600
Contractual Professional Services	693,600	632,100	495,000	-	-	-	-	-
5.1 Capital Program Allocation	**-**	**-**	**(46,500)**	**-**	**-**	**-**	**-**	**-**
5.2 Shared Services	**(220,000)**	**(220,000)**	**(357,500)**	**(60,000)**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(20,600)	(20,500)	(69,300)	(21,100)	-	-	-	-
Shared Services Reimbursement	(191,200)	(191,300)	(288,200)	(38,900)	-	-	-	-
Shared Services: Employee Benefit Reimb	(8,200)	(8,200)	-	-	-	-	-	-
886601 - Capital Improvement Planning	**$ -**	**$ -**	**$ 693,000**	**$ 1,943,900**	**$ 2,171,700**	**$ 1,742,200**	**$ 2,640,200**	**$ 2,680,000**
2.1 Salaries & Wages	**-**	**-**	**538,500**	**387,700**	**551,000**	**635,100**	**651,900**	**651,900**
2.3 Overtime	**-**	**-**	**5,000**	**-**	**1,300**	**4,400**	**5,000**	**5,000**
2.4 Employee Benefits	**-**	**-**	**149,500**	**111,700**	**161,700**	**190,200**	**197,200**	**200,800**
4.2 Supplies & Other	**-**	**-**	**-**	**14,500**	**26,600**	**29,200**	**29,900**	**30,100**
Memberships, Licenses & Subscriptions	-	-	-	1,200	1,200	1,200	1,300	1,300
Mileage and Parking	-	-	-	500	800	800	800	800
Office Supplies	-	-	-	1,500	1,500	1,500	1,500	1,500
Training and Internal Meetings	-	-	-	5,400	11,100	12,300	12,500	12,800
Travel	-	-	-	5,900	12,000	13,400	13,800	13,700
4.3 Contractual Services	**-**	**-**	**-**	**3,206,200**	**3,242,900**	**2,731,300**	**1,756,200**	**1,792,200**
Contractual Professional Services	-	-	-	3,206,200	3,242,900	2,731,300	1,756,200	1,792,200
5.1 Capital Program Allocation	**-**	**-**	**-**	**(1,776,200)**	**(1,811,800)**	**(1,848,000)**	**-**	**-**
Grand Total	**$ 14,416,700**	**$ 13,588,400**	**$ 15,514,400**	**$ 19,161,500**	**$ 18,420,100**	**$ 22,432,200**	**$ 24,078,100**	**$ 25,566,200**

Highlights

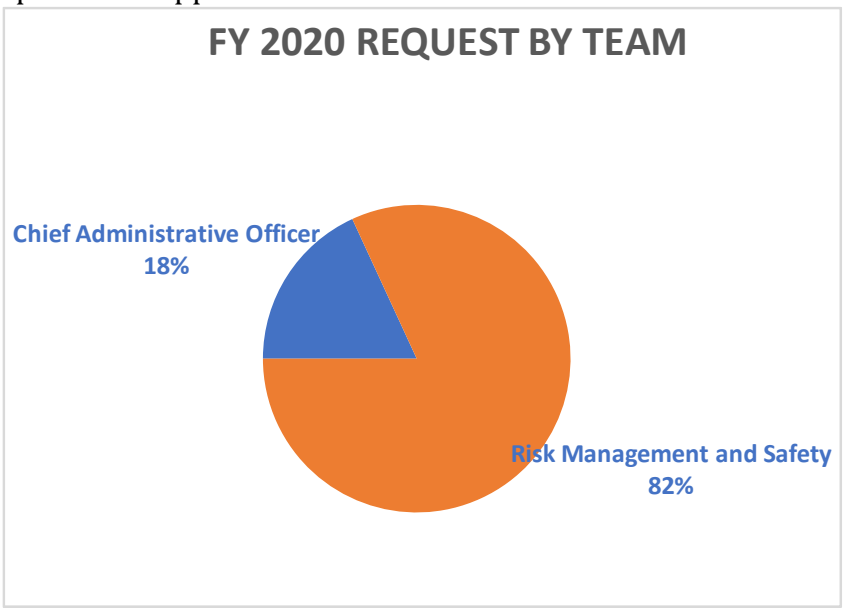
The Chief Administrative Officer Area presently is leading GLWA in several strategic initiatives.

- **Establish a Succession Planning Process for the Utility -** support and advance the strategic vision of the Board of Directors and the Chief Executive Officer for the utility.
- **Stand-up and Support Governmental Relations Initiative** -retain Government Relations and Legislative Representation Services.
- **Build Out of Risk Management/Safety Organization** - add additional professionals experienced in an array of environmental safety compliance matters such as chemical hygiene, process safety management, spill prevention, safety data sheets, safety audits, and risk management processes/procedures.

Organization

The Chief Administrative Officer Area consists of two teams.

- **Chief Administrative Officer** – provides support to the Board of Directors and CEO. The Office of the Chief Administrative and Compliance Officer provides coordinative services and administrative support to Enterprise Risk Management, Organizational Development, General Counsel Groups and Information Technology



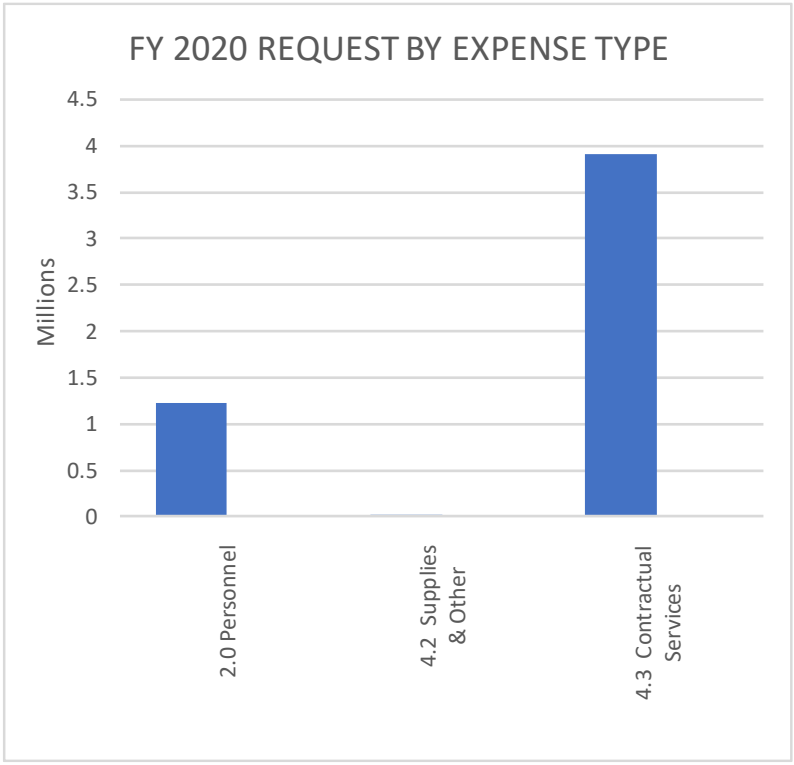
- **Enterprise Risk Management** – responsible for a process, effected by GLWA's board of directors and management, which is designed to identify potential events that may affect the Authority, and to manage risk within its risk appetite to provide reasonable assurance regarding the achievement of GLWA's objectives

Expense Categories

There are two major categories of Chief Administrative Officer expenses in the Operations and Maintenance Budget as listed below.

- Contractual Services
- Personnel

Contractual Services is the highest expense category and for FY 202,0 it is remaining consistent with prior and future budget years. The contractual services account encompasses three major contracts; Government Relation Services, County Fire and NTH Engineering contract (CS-213) which replaced SOMAT (CS- 1513) for environmental health & safety compliance services.



Biennial Budget Request

The biennial budget reflects a decrease in FY 2020 in personnel costs as a result of Enterprise Risk Management re-evaluating their staffing plan to delay filling open positions until second quarter of FY 2020.

Biennial Budget Request by Expense Category

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
⊞2.0 Personnel	$ 911,700	$ 882,400	$ 1,408,100	$ 298,321	$ 1,233,300	$ (174,800)	-12.4%	$ 1,414,400
⊞4.2 Supplies & Other	11,000	8,800	8,000	9,492	23,100	15,100	188.8%	23,300
⊞4.3 Contractual Services	3,825,000	3,847,400	3,828,500	1,202,505	3,911,300	307,300	8.5%	3,964,600
⊞5.1 Capital Program Allocation	(8,600)	-	-	-	-	-	N/A	-
Grand Total	$ 4,739,100	$ 4,738,600	$ 5,244,600	$ 1,510,318	$ 5,167,700	$ 147,600	2.9%	$ 5,402,300

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Chief Administrative Officer	$ 561,400	$ 561,400	$ 1,105,200	$ 231,283	$ 936,600	$ 55,900	6.3%	$ 944,400
Risk Management and Safety	4,177,700	4,177,200	4,139,400	1,279,034	4,231,100	91,700	2.2%	4,457,900
Grand Total	**$ 4,739,100**	**$ 4,738,600**	**$ 5,244,600**	**$ 1,510,318**	**$ 5,167,700**	**$ 147,600**	**2.9%**	**$ 5,402,300**

Personnel Budget

Chief Administrative Officer Area consists of 13 positions for FY 2020, which is staying consistent with FY 2019 staffing level.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Chief Administrative Officer	**9.00**	**13.00**	**13.00**	**13.00**	**13.00**	**13.00**	**13.00**
Chief Administrative Officer	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Enterprise Risk Management	4.00	8.00	8.00	8.00	8.00	8.00	8.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Chief Administrative Officer	9.00	**13.00**	**11.00**	**13.00**	**13.00**	**13.00**	**13.00**
Chief Administrative Officer	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Enterprise Risk Management	4.00	8.00	6.00	8.00	8.00	8.00	8.00

Personnel Budget - The table below presents the Chief Administrative Officer Area personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

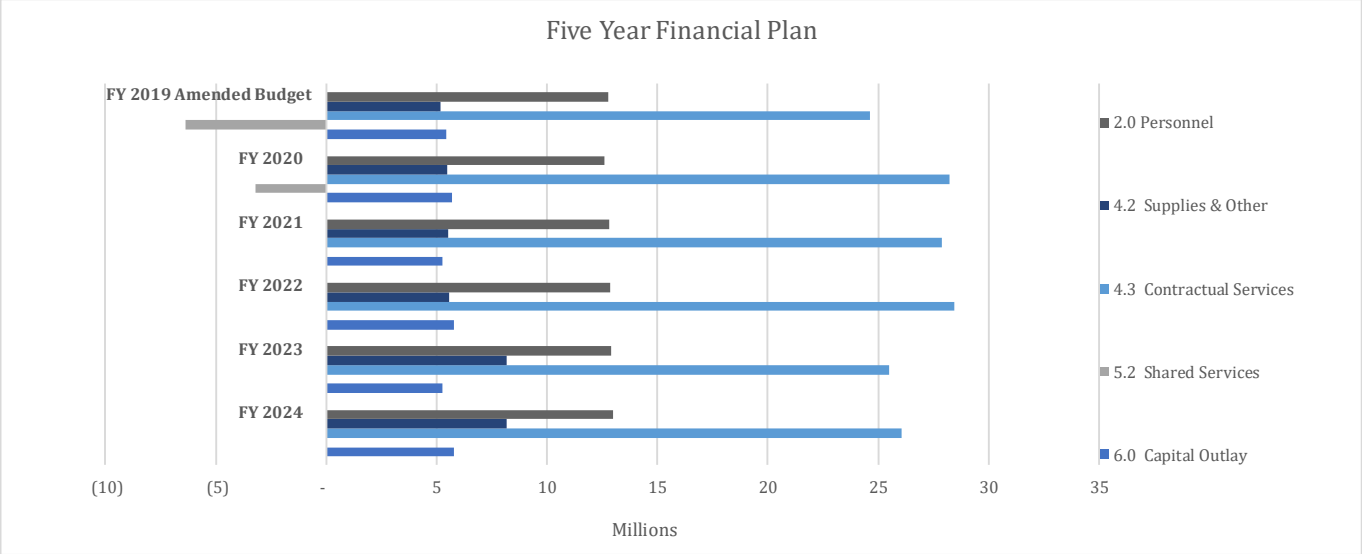
Personnel Budget

Team	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Chief Administrative Officer	$ 627,634	$ 633,552	$ 636,171	$ 638,791	$ 641,410	$ 644,030
Enterprise Risk Management	780,353	599,711	778,219	781,592	784,966	788,339
Grand Total	**$ 1,407,987**	**$ 1,233,263**	**$ 1,414,390**	**$ 1,420,383**	**$ 1,426,376**	**$ 1,432,369**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Category	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
⊞2.0 Personnel	$ 1,408,100	$ 1,233,300	$ (174,800)	-12.4%	$ 1,414,400	$ 1,420,400	$ 1,426,500	$ 1,432,400
⊞4.2 Supplies & Other	8,000	23,100	15,100	188.8%	23,300	24,500	24,700	24,800
⊞4.3 Contractual Services	3,828,500	3,911,300	307,300	8.5%	3,964,600	4,019,000	4,074,500	4,138,000
Grand Total	**$ 5,244,600**	**$ 5,167,700**	**$ 147,600**	**2.9%**	**$ 5,402,300**	**$ 5,463,900**	**$ 5,525,700**	**$ 5,595,200**

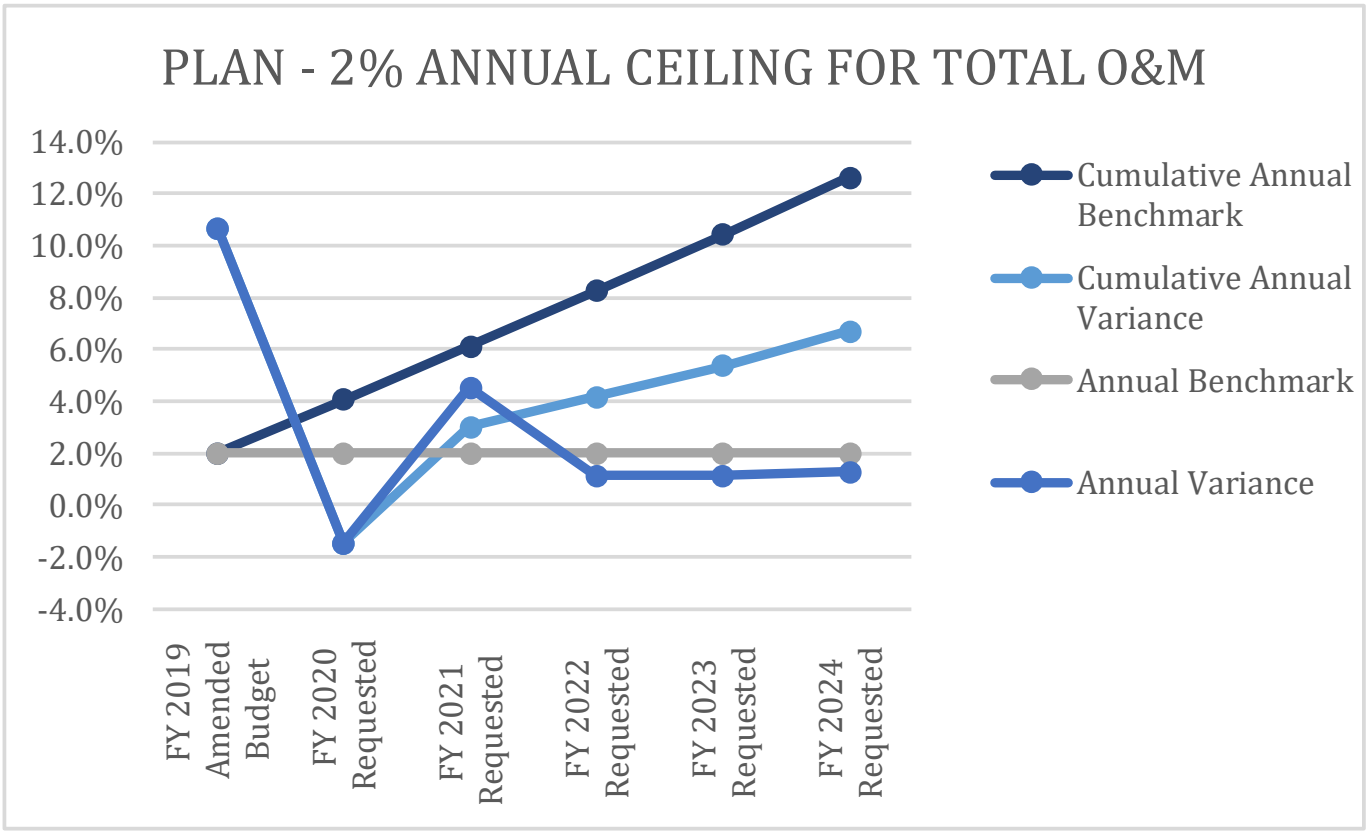


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
⊞Chief Administrative Officer	$ 1,105,200	$ 936,600	$ 55,900	6.3%	$ 944,400	$ 952,300	$ 960,400	$ 975,300
⊞Enterprise Risk Management and Safety	1,775,400	1,819,800	44,400	2.5%	1,998,400	2,002,900	2,006,400	2,009,800
⊞Enterprise Risk Mgt. Insurance Fund	2,364,000	2,411,300	47,300	2.0%	2,459,500	2,508,700	2,558,900	2,610,100
Grand Total	$ 5,244,600	$ 5,167,700	$ 147,600	2.9%	$ 5,402,300	$ 5,463,900	$ 5,525,700	$ 5,595,200

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Systems Planning Group's financial plan reflects a Five Year Overall increase of 7.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

"open for 1.2019 revised draft"

Capital Outlay

Capital Outlay is not a component of this group.

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in alphabetical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883001 - Chief Administrative Officer	$ 561,400	$ 184,856	$ 880,700	$ 936,600	$ 944,400	$ 952,300	$ 960,400	$ 975,300
2.1 Salaries & Wages	461,000	147,236	495,000	500,000	500,000	500,000	500,000	500,000
Salaries & Wages	461,000	147,236	495,000	500,000	500,000	500,000	500,000	500,000
2.4 Employee Benefits	96,400	37,620	132,700	133,600	136,200	138,800	141,500	144,100
Employee Benefits	96,400	37,620	132,700	133,600	136,200	138,800	141,500	144,100
2.7 Administrative Personnel Services	-	(184,856)	-	-	-	-	-	-
Allocated: Personnel Services	-	(184,856)	-	-	-	-	-	-
4.2 Supplies & Other	4,000	-	3,000	3,000	3,100	3,200	3,300	3,300
Memberships, Licenses & Subscriptions	-	-	-	-	-	-	-	-
Office Supplies	-	-	-	-	-	-	-	-
Training and Internal Meetings	2,000	-	2,000	2,000	2,100	2,100	2,200	2,200
Travel	2,000	-	1,000	1,000	1,000	1,100	1,100	1,100
4.3 Contractual Services	-	-	250,000	300,000	305,100	310,300	315,600	327,900
Contractual Professional Services	-	-	250,000	300,000	305,100	310,300	315,600	327,900
883401 - Enterprise Risk Management and Safety	$ 1,552,700	$ 336,785	$ 1,775,400	$ 1,819,800	$ 1,998,400	$ 2,002,900	$ 2,006,400	$ 2,009,800
2.1 Salaries & Wages	282,700	91,819	602,800	466,600	602,800	602,800	602,800	602,800
Salaries & Wages	282,700	91,819	602,800	466,600	602,800	602,800	602,800	602,800
2.3 Overtime	-	339	-	-	-	-	-	-
Overtime	-	339	-	-	-	-	-	-
2.4 Employee Benefits	71,600	12,540	177,600	133,100	175,400	178,800	182,200	185,500
Employee Benefits	71,600	12,540	177,600	133,100	175,400	178,800	182,200	185,500
4.2 Supplies & Other	7,000	887	5,000	20,100	20,200	21,300	21,400	21,500
Memberships, Licenses & Subscriptions	-	-	-	-	-	-	-	-
Mileage and Parking	-	267	-	-	-	-	-	-
Operating Supplies	7,000	620	5,000	5,100	5,200	6,300	6,400	6,500
Training and Internal Meetings	-	-	-	15,000	15,000	15,000	15,000	15,000
Travel	-	-	-	-	-	-	-	-
4.3 Contractual Services	1,200,000	231,539	990,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Contractual Operating Services	1,200,000	231,539	990,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
5.1 Capital Program Allocation	(8,600)	-	-	-	-	-	-	-
Capital Program: Salaries & Wages-Direct	(8,600)	-	-	-	-	-	-	-
205 Capital Outlay	-	-	100,000	-	-	-	-	-
Capital Outlay over $5k(I&E-Capitalized)	-	-	100,000	-	-	-	-	-
883411 - Enterprise Risk Mgt. Insurance Fund	$ 2,625,000	$ 958,867	$ 2,364,000	$ 2,411,300	$ 2,459,500	$ 2,508,700	$ 2,558,900	$ 2,610,100
4.3 Contractual Services	2,625,000	958,867	2,364,000	2,411,300	2,459,500	2,508,700	2,558,900	2,610,100
Contractual Operating Services	2,625,000	958,867	2,364,000	2,411,300	2,459,500	2,508,700	2,558,900	2,610,100
Grand Total	$ 4,739,100	$ 1,480,508	$ 5,020,100	$ 5,167,700	$ 5,402,300	$ 5,463,900	$ 5,525,700	$ 5,595,200

Highlights

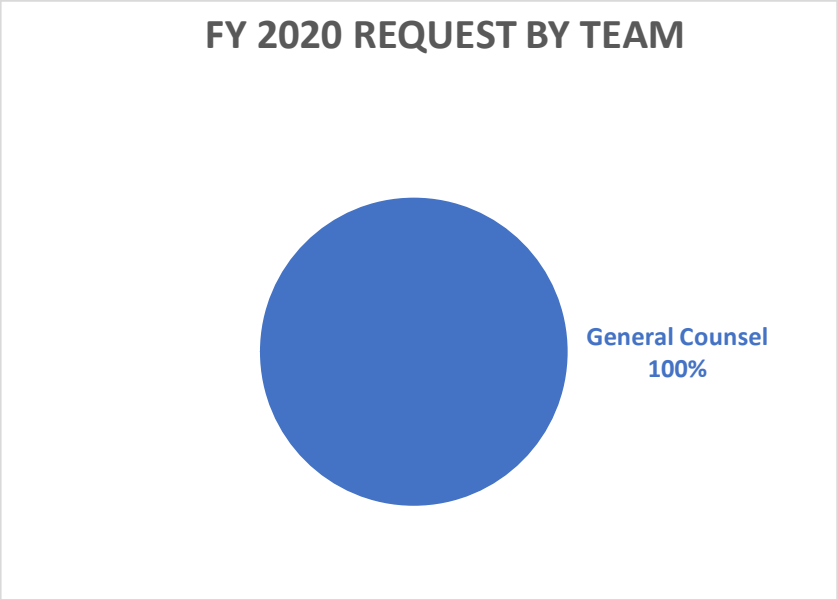
The General Counsel Area presently is leading GLWA in several strategic initiatives.

- **Work collaboratively with GLWA customers to secure resolutions supporting GLWA's Industrial Pretreatment Program (IPP) -** Begin rollout of IPP to communities and secure resolutions from communities as required by state law.
- **Create a Best Practices Manual -** Ensure consistent representation of the Authority in contractual, real estate, employment and litigation matters.
- **Develop GLWA templates -** Modernize the contractual relationship with our vendors with GLWA contract templates.

Organization

The General Counsel Area consists of a single team.

- **General Counsel**– provides legal representation, strategic guidance, counseling, advice, and support to the Great Lakes Water Authority so that it may make sound decisions and use appropriate legal processes to better provide its customers with quality compliant water services.

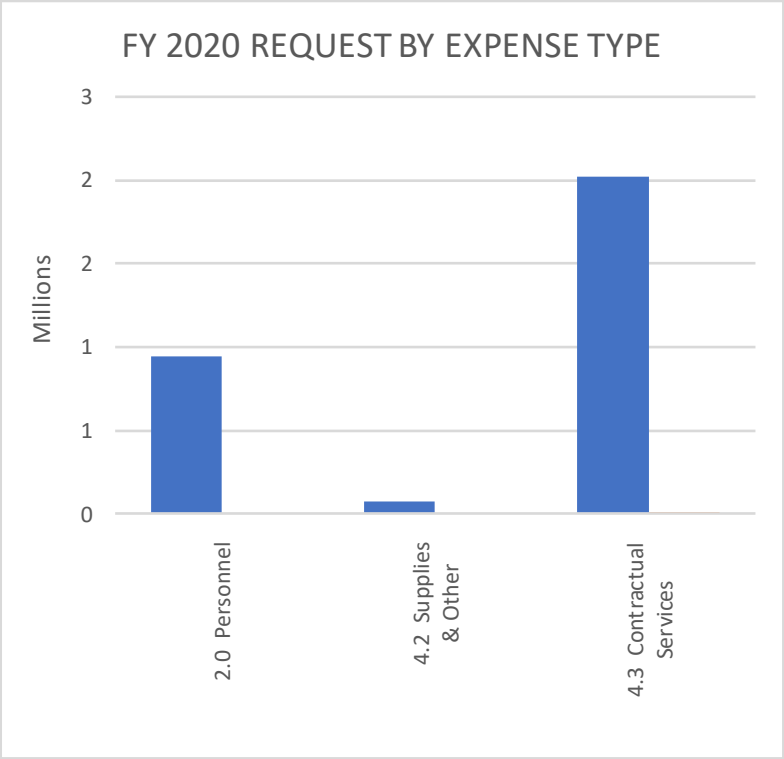


Expense Categories

There are two major categories of General Counsel expenses in the Operations and Maintenance Budget as listed below.

- Personnel Costs
- Contractual Services

Contractual Services is the highest expense category and for FY 2020 it is remaining consistent with prior and future budget years. This account contains the outside counsel for a wide range of matters including, expert witnesses, environmental, labor, contract review, land matters, non-transactional bond counsel, and other matters.



Biennial Budget Request

The biennial budget reflects an increase in FY 2020 as a result of General Counsel's emphasis to increase continuing education training for its team members.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 743,200	$ 714,700	$ 941,400	$ 270,149	$ 941,400	$ -	0.0%	$ 945,200
4.2 Supplies & Other	35,400	20,100	52,200	4,743	78,400	26,200	50.2%	79,900
4.3 Contractual Services	3,990,000	4,026,600	1,783,900	518,380	2,019,100	235,200	13.2%	2,059,400
5.1 Capital Program Allocation	-	-	-	-	-	-	0.0%	-
5.2 Shared Services	(8,000)	(400)	(8,000)	-	-	8,000	-100.0%	-
Grand Total	$ 4,760,600	$ 4,761,000	$ 2,769,500	$ 793,272	$ 3,038,900	$ 269,400	9.7%	$ 3,084,500

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
General Counsel	$ 4,760,600	$ 4,761,000	$ 2,769,500	$ 793,272	$ 3,038,900	$ 269,400	9.7%	$ 3,084,500
Grand Total	**$ 4,760,600**	**$ 4,761,000**	**$ 2,769,500**	**$ 793,272**	**$ 3,038,900**	**$ 269,400**	**9.7%**	**$ 3,084,500**

Personnel Budget

General Counsel consists of seven positions for FY 2020, which is staying consistent with FY 2019 staffing level.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
General Counsel	**6.00**	**7.00**	**7.00**	**7.00**	**7.00**	**7.00**	**7.00**
General Counsel	6.00	7.00	7.00	7.00	7.00	7.00	7.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
General Counsel	**6.00**	**7.00**	**7.00**	**7.00**	**7.00**	**7.00**	**7.00**
General Counsel	6.00	7.00	7.00	7.00	7.00	7.00	7.00

Personnel Budget - The table below presents the General Counsel personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

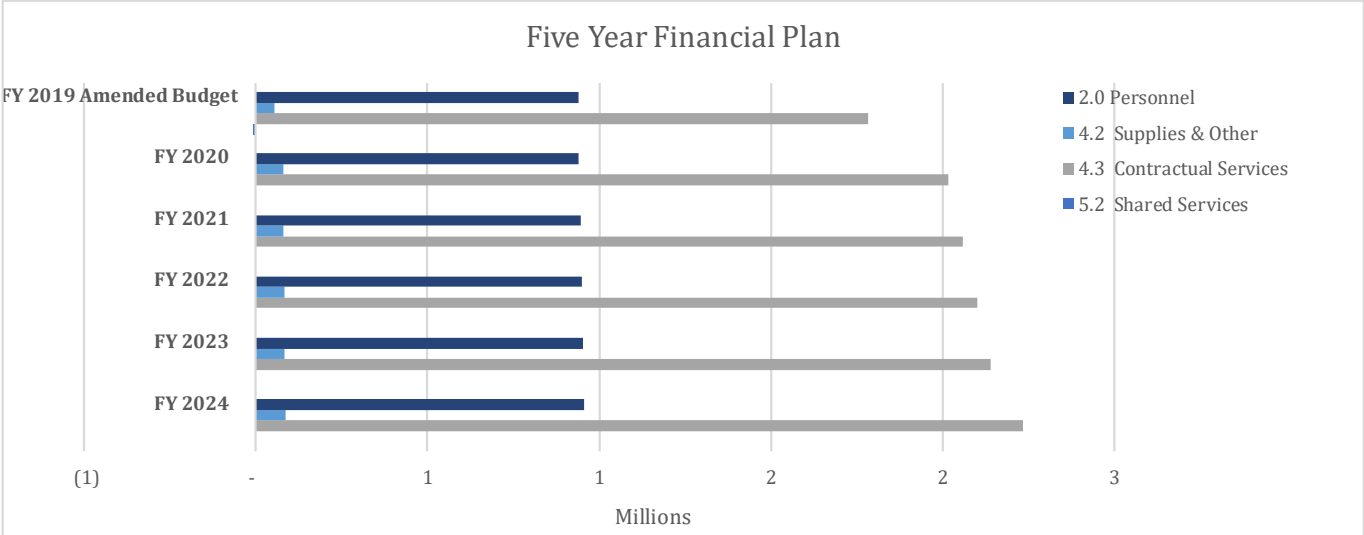
Personnel Budget

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
General Counsel	$ 941,400	$ 941,400	$ 945,200	$ 949,000	$ 952,900	$ 956,700
Grand Total	**$ 941,400**	**$ 941,400**	**$ 945,200**	**$ 949,000**	**$ 952,900**	**$ 956,700**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 941,400	$ 941,400	$ -	0.0%	$ 945,200	$ 949,000	$ 952,900	$ 956,700
4.2 Supplies & Other	52,200	78,400	26,200	50.2%	79,900	81,500	83,000	85,900
4.3 Contractual Services	1,783,900	2,019,100	235,200	13.2%	2,059,400	2,100,500	2,142,400	2,234,300
5.2 Shared Services	(8,000)	-	8,000	-100.0%	-	0	0	0
Grand Total	$ 2,769,500	$ 3,038,900	269,400	9.7%	$ 3,084,500	$ 3,131,000	$ 3,178,300	$ 3,276,900

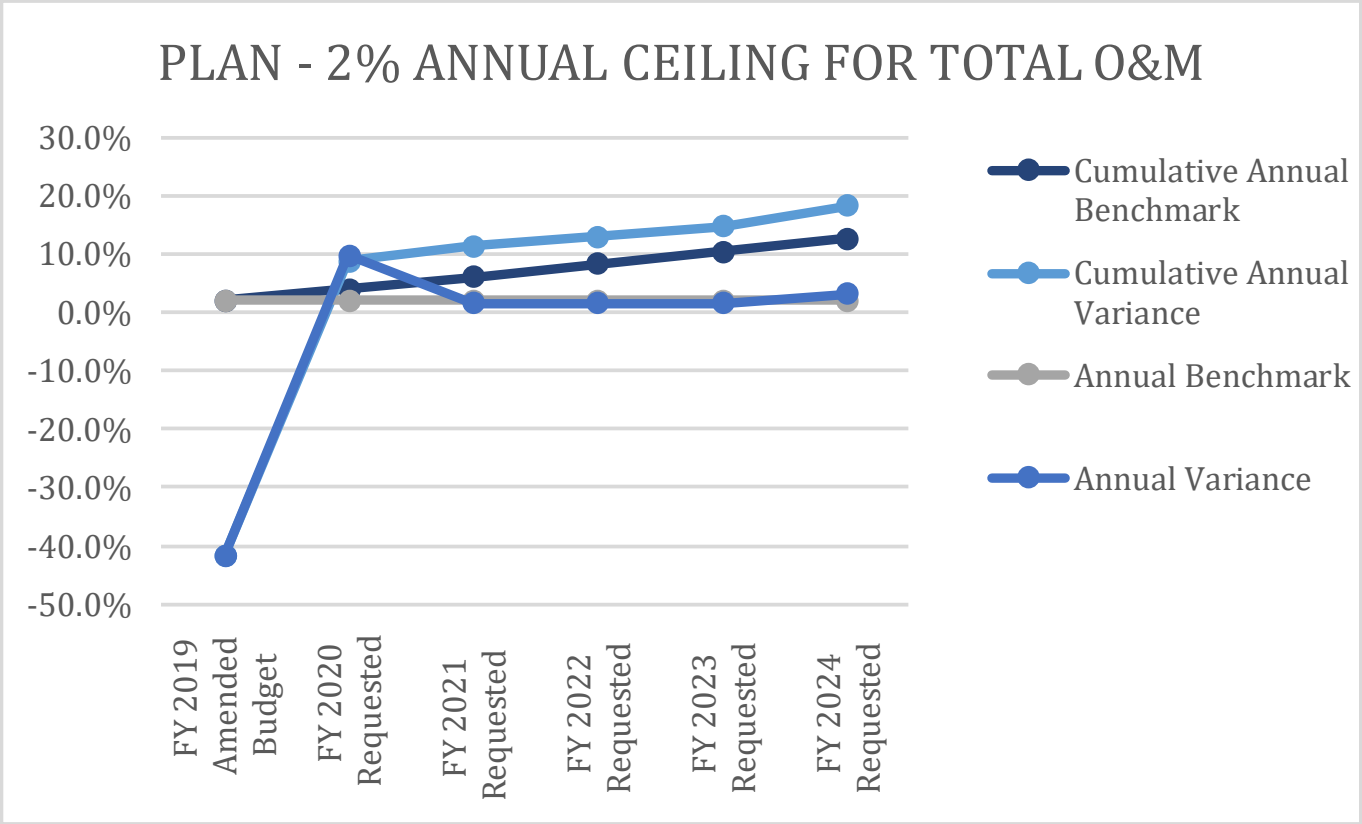


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
General Counsel	$ 2,769,500	$ 3,038,900	$ 269,400	9.7%	$ 3,084,500	$ 3,131,000	$ 3,178,300	$ 3,276,900
Grand Total	$ 2,769,500	$ 3,038,900	$ 269,400	9.7%	$ 3,084,500	$ 3,131,000	$ 3,178,300	$ 3,276,900

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The General Counsel Group's financial plan reflects a Five Year Overall increase of 8.3% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

"Open for 1.2019 Revised Draft"

Capital Outlay

Capital Outlay is not a component of this group.

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. The expenses are listed in alphabetical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883101 - General Counsel	**$ 4,760,600**	**$ 860,609**	**$ 2,994,000**	**$ 3,038,900**	**$ 3,084,500**	**$ 3,131,000**	**$ 3,178,300**	**$ 3,276,900**
2.1 Salaries & Wages	**580,400**	**139,166**	**745,900**	**745,900**	**745,900**	**745,900**	**745,900**	**745,900**
Salaries & Wages	580,400	139,166	745,900	745,900	745,900	745,900	745,900	745,900
2.4 Employee Benefits	**162,800**	**35,530**	**195,500**	**195,500**	**199,300**	**203,100**	**207,000**	**210,800**
Employee Benefits	162,800	35,530	195,500	195,500	199,300	203,100	207,000	210,800
4.2 Supplies & Other	**35,400**	**7,236**	**52,200**	**78,400**	**79,900**	**81,500**	**83,000**	**85,900**
Memberships, Licenses & Subscriptions	7,400	1,555	11,800	12,000	12,300	12,500	12,700	14,000
Mileage and Parking	-	198	-	-	-	-	-	-
Office Supplies	18,700	897	5,000	5,100	5,200	5,300	5,400	6,000
Operating Supplies	-	3,936	-	-	-	-	-	-
Postage	2,700	-	2,700	2,800	2,800	2,900	2,900	3,000
Training and Internal Meetings	6,600	650	32,700	43,500	44,600	45,800	47,000	47,900
Travel	-	-	-	15,000	15,000	15,000	15,000	15,000
4.3 Contractual Services	**3,990,000**	**679,132**	**2,008,400**	**2,019,100**	**2,059,400**	**2,100,500**	**2,142,400**	**2,234,300**
Contractual Operating Services	-	121	-	-	-	-	-	-
Contractual Professional Services	-	-	(224,500)	-	-	-	-	-
Legal	3,990,000	679,011	2,232,900	2,019,100	2,059,400	2,100,500	2,142,400	2,234,300
5.2 Shared Services	**(8,000)**	**(455)**	**(8,000)**	**-**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(2,600)	(325)	(2,600)	-	-	-	-	-
Shared Services Reimbursement	(5,400)	-	(5,400)	-	-	-	-	-
Shared Services: Employee Benefit Reimb	-	(130)	-	-	-	-	-	-
Grand Total	**$ 4,760,600**	**$ 860,609**	**$ 2,994,000**	**$ 3,038,900**	**$ 3,084,500**	**$ 3,131,000**	**$ 3,178,300**	**$ 3,276,900**

Highlights

The Information Technology Group is leading GLWA in several strategic initiatives.

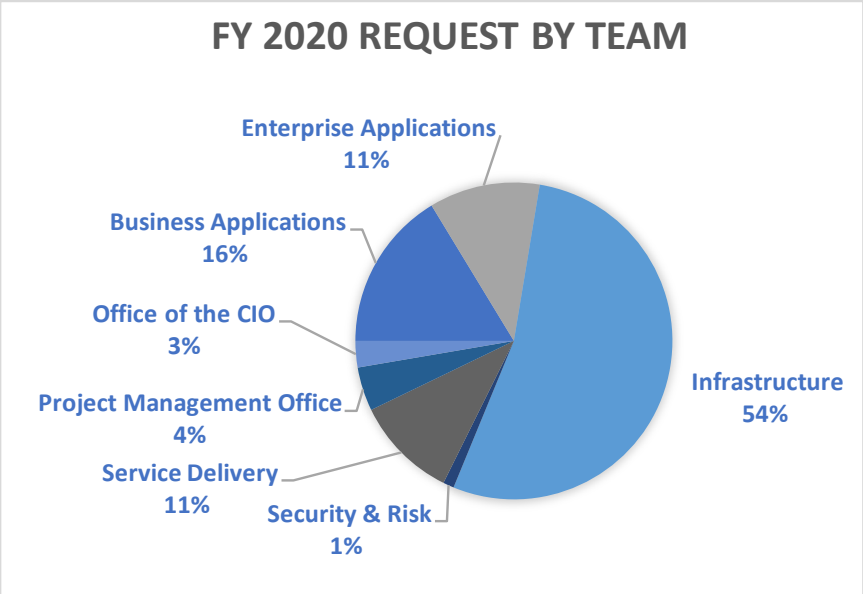
- **Shared Services -** Over the five-year plan, the dollar amount of shared services reimbursement from DWSD decreases to nearly zero. This is consistent with a long-tern plan consistent with standing up systems for DWSD that are integrated with City of Detroit systems. The decrease in service to DWSD shifts resources to an increased focused on growing demands for GLWA's IT services.
- **Infrastructure** - Build a sustainable, secure, compliant, robust, and reliable IT infrastructure as the foundation to support GLWA's core enterprise technology needs.
- **Enterprise Asset Management** - Support enterprise asset management operations and the Capital Improvement Plan using improved technology platforms.

Big Dollar Contract Spend

IT Centralized Service	Telecom, Managed Security & Networks 626700	Telecom, Managed Security & Networks 626700	Disaster Recovery Services 617900	Professional Services 617400	Professional Services 617400	Professional Services 617400	Professional Services 617400	Professional Services 617400	Professional Services 617400	Total
Prime Consultant	AT&T	Verizon	Disaster Recovery	ERP PM Services	GIS Professional	Staff Augmentation	Image Soft - OnBase Support	DXC - WAM	Ceridian Human Resources Information Systems (HRIS)	
Contract #	CS-1689	1801674	TBD	TBD	CS-091	CS - 071	1801819	CS-119	1803978	
Contract Amount	$ 60,000,000	$ 500,000	TBD	TBD	$ 955,838	$ 2,782,960	$ 165,513	$ 7,000,000	$ 3,217,779	$ 74,622,089
Contract End Date	09/12/23	10/12/19	TBD	TBD	03/31/19	12/31/19	11/30/19	06/30/22	06/30/19	
Cost Center Name	Infrastructure	IT Service Delivery	Infrastructure	IT Project Management	IT Enterprise Applications	Various	IT Enterprise Applications	IT Business Applications	IT Business Applications	
FY 2018 Spend	$ 10,272,962	$ 562,000	$ -	$ -	$ 333,771	$ -	$ -	$ 1,896,426	$ -	$ 13,065,159
FY 2018 Budget	13,300,000	384,000	400,000	-	418,400	135,966	200,000	2,847,416	-	17,685,782
FY 2019 Budget	13,300,000	402,000	400,000		418,400	112,266	200,000	2,972,416	700,000	18,505,082
FY 2020 Estimate	13,400,000	420,000	400,000	333,234	720,000	298,266	200,000	3,400,000	700,000	19,871,500
FY 2021 Estimate	13,500,000	424,200	400,000	339,898	720,000	296,166	200,000	3,400,000	700,000	19,980,264
FY 2022 Estimate	13,600,000	432,700	400,000	346,696	720,000	299,306	200,000	3,400,000	700,000	20,098,702
FY 2023 Estimate	13,600,000	441,300	400,000	353,630	800,000	299,306	200,000	-	700,000	16,794,236
FY 2024 Estimate	14,704,100	450,200	-	360,703	800,000	198,000	200,000	-	700,000	17,413,003
Total	**$105,677,062**	**$ 3,516,400**	**$ 2,400,000**	**$ 1,734,161**	**$ 4,930,571**	**$ 1,639,276**	**$ 1,400,000**	**$ 17,916,258**	**$ 4,200,000**	**$ 143,413,728**

Organization

The GLWA Information Technology (IT) Group consists of seven teams.



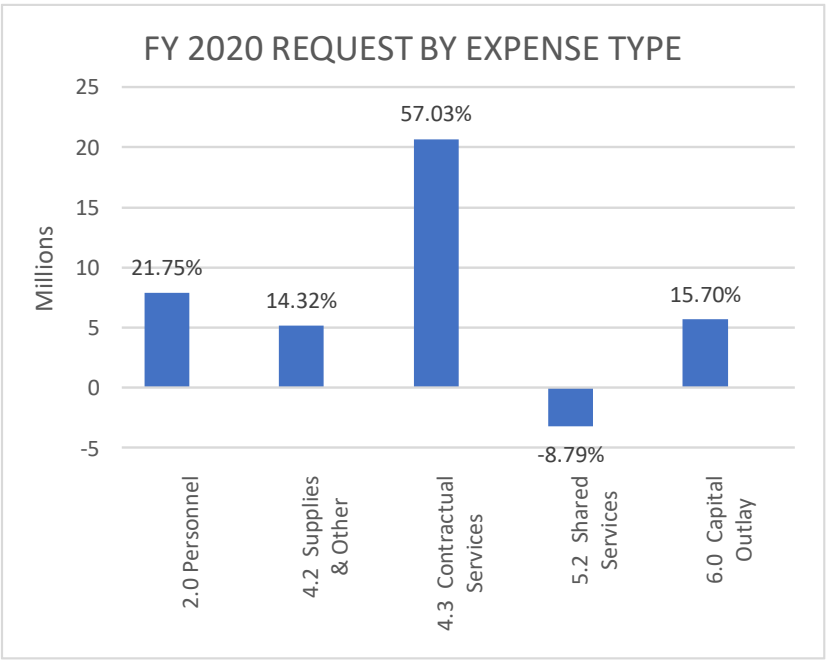
- **Office of the Chief Information Officer** – administration and oversight
- **Project Management Office** – fosters collaboration and supports execution of initiatives
- **Security & Risk** – develops and deploys security measures to reduce risk
- **Infrastructure** – manages a network that spans xx locations across xx square miles
- **Business Applications** – supports systems unique to defined areas such as geographic information, financial, and work order & asset management
- **Enterprise Applications** – supports applications common to all team members such as email, office automation, and document management
- **Service Delivery** – provides frontline support to all team members

Expense Categories

There are five major categories of IT expenses in the Operations and Maintenance Budget as listed below.

- Contractual services
- Personnel Costs
- Capital Outlay
- Supplies & Other
- Shared Services

FY 2020 is consistent with prior and future budget years as it related to expense categories except for shared services reimbursement as noted above.



Biennial Budget Request

The biennial reflects an increase in FY 2020 as a result of increased IT needs. The increase in FY 2020 is due the loss of shared service reimbursements of $3,185,800 and a further decrease in FY 2021 of $3,176,700. While it is anticipated that the IT shared services will be eliminated at the end of FY 2020, the parties may extend or expand the shared services as opportunities arise.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 6,131,900	$ 6,133,700	$ 7,659,600	$ 1,982,416	$ 7,550,300	$ (109,300)	-1.4%	$ 7,583,300
4.2 Supplies & Other	4,025,700	4,027,500	5,095,300	453,779	5,191,400	96,100	1.9%	5,196,600
4.3 Contractual Services	18,348,300	18,425,000	18,670,200	5,589,877	21,007,900	2,337,700	12.5%	20,564,200
5.1 Capital Program Allocation	-	-	-	-	-	-	n/a	-
5.2 Shared Services	(7,808,800)	(8,051,300)	(6,362,500)	(1,750,467)	(3,185,800)	3,176,700	-49.9%	-
6.0 Capital Outlay	3,776,500	3,787,500	5,445,200	1,616,673	5,690,500	245,300	4.5%	5,286,300
Grand Total	$ 24,473,600	$ 24,322,400	$ 30,507,800	$ 7,892,278	$ 36,254,300	$ 5,746,500	18.8%	$ 38,630,400

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Info Technology Business Applications	5,043,100	4,980,200	6,001,100	1360523.04	5,913,900	(87,200)	-1.5%	6,408,200
Info Technology Enterprise Applications	1,075,400	1,074,900	3,193,200	367804.64	4,098,700	905,500	28.4%	4,063,700
Info Technology Infrastructure	14,352,300	14,264,300	18,357,800	5566604.09	19,432,400	1,074,600	5.9%	21,640,600
Info Technology Security & Risk	326,000	326,600	491,700	-462312.43	403,200	(88,500)	-18.0%	436,500
Info Technology Service Delivery	2,136,300	2,136,300	3,371,900	573601.14	3,807,700	435,800	12.9%	3,854,200
InfoTechnology Project Management Office	1,102,600	1,102,400	(671,400)	317457.89	1,622,600	2,294,000	-341.7%	1,634,700
Office of the Chief Information Officer	437,900	437,700	(236,500)	168599.31	975,800	1,212,300	-512.6%	592,500
Grand Total	$ 24,473,600	$ 24,322,400	$ 30,507,800	$ 7,892,278	$ 36,254,300	$ 5,746,500	18.8%	$ 38,630,400

Personnel Budget

Information Technology personnel consists of 71 positions for FY 2020, which is staying consistent with FY 2019 staffing level.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Information Technology	**68.00**	**71.00**	**71.00**	**71.00**	**71.00**	**71.00**	**71.00**
Office of CIO	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Project Management Office	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Service Delivery	12.00	15.00	15.00	15.00	15.00	15.00	15.00
Infrastructure	14.00	13.00	13.00	13.00	13.00	13.00	13.00
Business Applications	12.00	13.00	13.00	13.00	13.00	13.00	13.00
Enterprise Applications	14.00	13.00	13.00	13.00	13.00	13.00	13.00
Security & Risk	2.00	3.00	3.00	3.00	3.00	3.00	3.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Information Technology	**67.75**	**71.00**	**71.00**	**71.00**	**71.00**	**71.00**	**71.00**
Office of CIO	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Project Management Office	9.75	10.00	10.00	10.00	10.00	10.00	10.00
Service Delivery	12.00	15.00	15.00	15.00	15.00	15.00	15.00
Infrastructure	14.00	13.00	13.00	13.00	13.00	13.00	13.00
Business Applications	12.00	13.00	13.00	13.00	13.00	13.00	13.00
Enterprise Applications	14.00	13.00	13.00	13.00	13.00	13.00	13.00
Security & Risk	2.00	3.00	3.00	3.00	3.00	3.00	3.00

Personnel Budget - The table below presents the Information Technology personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

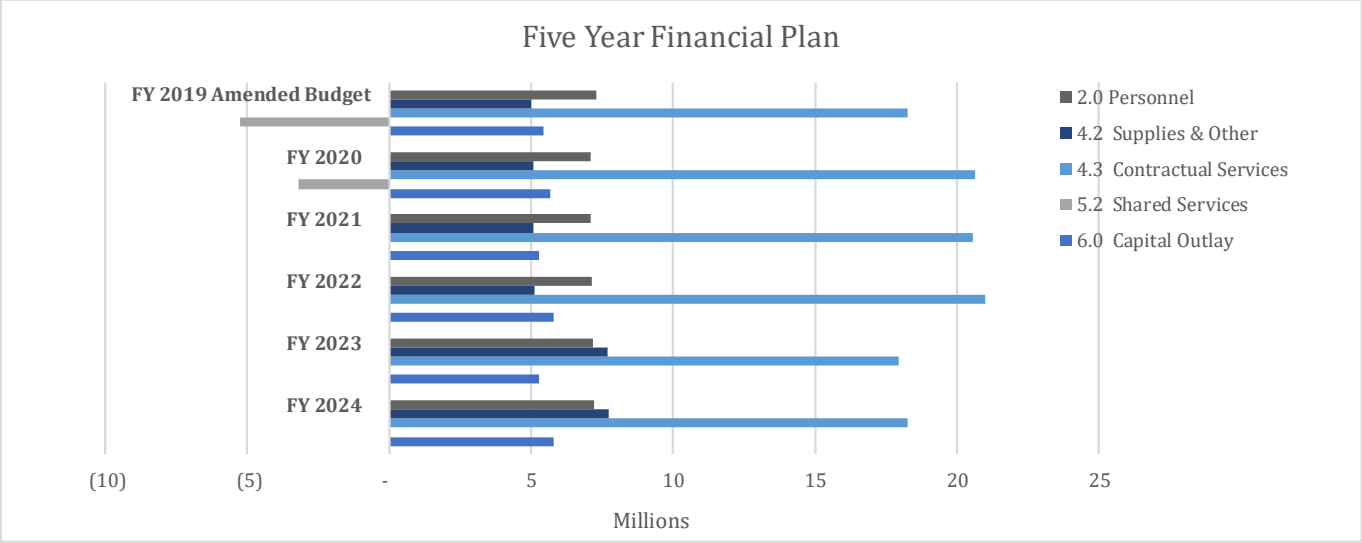
Personnel Budget

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Office of CIO	$ 359,400	$ 470,400	$ 472,400	$ 474,400	$ 476,400	$ 478,400
Project Management Office	1,090,300	1,273,500	1,278,700	1,284,000	1,289,200	1,294,500
Service Delivery	1,195,200	1,207,800	1,213,600	1,219,300	1,225,100	1,230,800
Infrastructure	1,300,900	1,359,000	1,365,000	1,370,900	1,376,800	1,382,800
Business Applications	1,409,600	1,473,700	1,480,000	1,486,300	1,492,600	1,498,900
Enterprise Applications	1,227,500	1,397,600	1,403,700	1,409,700	1,415,800	1,421,800
Security & Risk	260,900	368,300	369,900	371,400	372,900	374,500
Grand Total	**$ 6,843,800**	**$ 7,550,300**	**$ 7,583,300**	**$ 7,616,000**	**$ 7,648,800**	**$ 7,681,700**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 7,659,600	$ 7,550,300	$ (109,300)	-1.4%	$ 7,583,300	$ 7,616,000	$ 7,648,800	$ 7,681,700
4.2 Supplies & Other	5,095,300	5,191,400	96,100	1.9%	5,196,600	5,240,800	7,831,200	7,842,300
4.3 Contractual Services	18,670,200	21,007,900	2,337,700	12.5%	20,564,200	20,999,200	17,936,100	18,276,000
5.2 Shared Services	(6,362,500)	(3,185,800)	3,176,700	-49.9%	-	0	0	0
6.0 Capital Outlay	5,445,200	5,690,500	245,300	4.5%	5,286,300	5,784,600	5,273,500	5,787,400
Grand Total	$ 30,507,800	$ 36,254,300	$ 5,746,500	18.8%	$ 38,630,400	$ 39,640,600	$ 38,689,600	$ 39,587,400

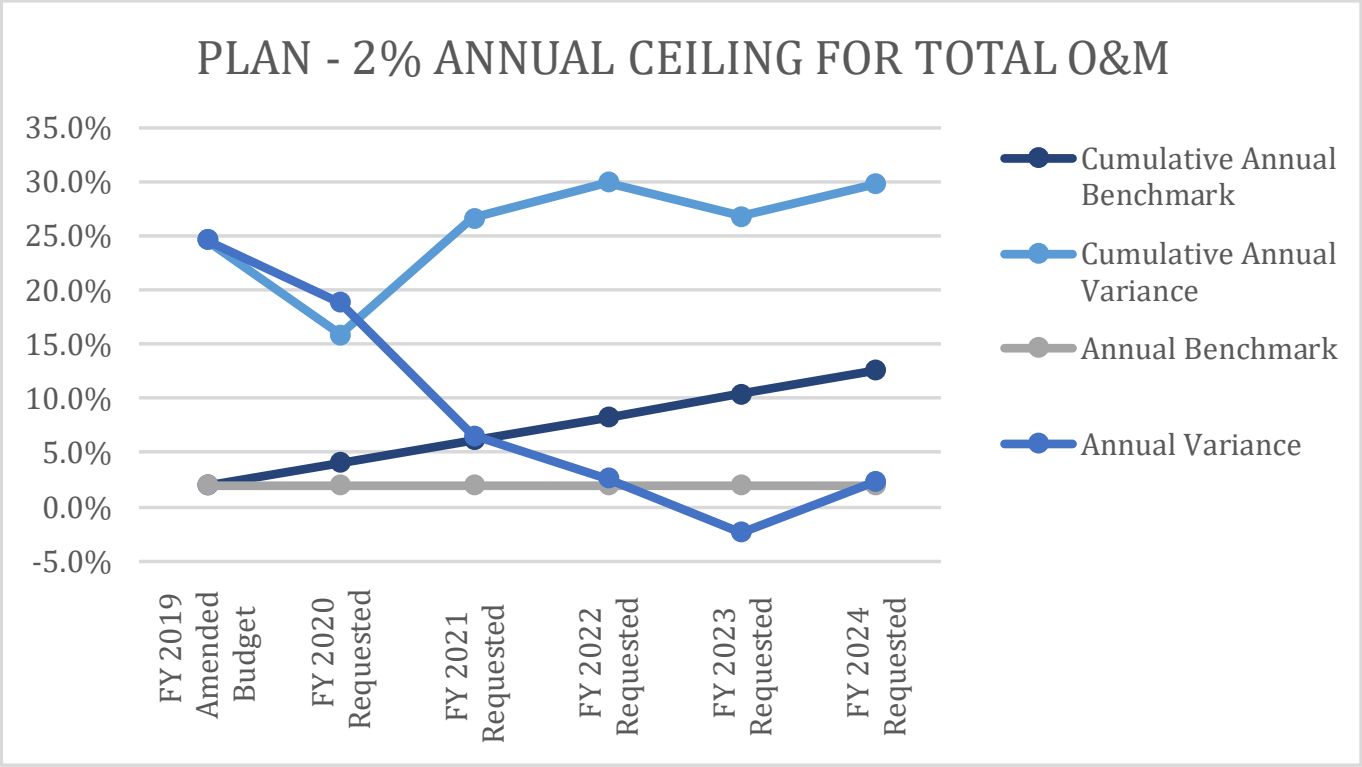


Biennial Budget Request by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Business Applications	$ 6,001,100	$ 5,913,900	$ (87,200)	-1.5%	$ 6,408,200	$ 6,417,700	$ 5,531,100	$ 5,438,400
Enterprise Applications	3,193,200	4,098,700	905,500	28.4%	4,063,700	4,211,100	4,251,900	4,222,600
Infrastructure	18,357,800	19,432,400	1,074,600	5.9%	21,640,600	22,431,100	22,375,700	23,318,800
Security & Risk	491,700	403,200	(88,500)	-18.0%	436,500	438,600	440,700	442,900
Service Delivery	3,371,900	3,807,700	435,800	12.9%	3,854,200	3,898,500	3,830,200	3,888,200
Project Management Offi	(671,400)	1,622,600	2,294,000	-341.7%	1,634,700	1,647,200	1,659,700	1,672,400
Office of the CIO	(236,500)	975,800	1,212,300	-512.6%	592,500	596,400	600,300	604,100
Grand Total	$ 30,507,800	$ 36,254,300	$ 5,746,500	18.8%	$ 38,630,400	$ 39,640,600	$ 38,689,600	$ 39,587,400

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The IT financial plan reflects a Five Year Overall increase of 30% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

"Open for 1.2019 Revised Draft."

Capital Outlay

IT capital outlay is funded by both the O&M budget and the I&E budget.

Capital Outlay by Asset Category

Asset Categories	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Data/Network	$ 2,000,034	$ 2,000,018	$ 2,000,000	$ 2,000,000	$ 2,000,000
Hardware	6,656,000	6,672,860	6,691,320	1,210,466	1,229,946
Leasehold Improvements, Computers & IT, Furniture & Fixtures	2,000,000	2,000,000	2,000,000	-	-
Software	2,534,466	2,113,422	2,593,280	2,063,034	2,557,454
Grand Total	**$ 13,190,500**	**$ 12,786,300**	**$ 13,284,600**	**$ 5,273,500**	**$ 5,787,400**

Capital Outlay by Funding Source

Asset Funding Source	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
I&E	$ 7,500,000	$ 7,500,000	$ 7,500,000	$ -	$ -
O&M	5,690,500	5,286,300	5,784,600	5,273,500	5,787,400
Grand Total	**$ 13,190,500**	**$ 12,786,300**	**$ 13,284,600**	**$ 5,273,500**	**$ 5,787,400**

Capital Outlay by Team

Team	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Info Technology Service Delivery	$ 1,170,100	$ 1,187,200	$ 1,204,500	$ 1,112,000	$ 1,128,900
Info Technology Infrastructure	5,741,800	5,313,800	5,788,100	3,362,500	3,859,000
Info Technology Enterprise Applications	666,100	672,300	678,500	685,000	685,000
Info Technology Business Applications	5,550,000	5,550,000	5,550,000	50,000	50,000
Info Technology Security & Risks	62,500	63,000	63,500	64,000	64,500
Grand Total	**$ 13,190,500**	**$ 12,786,300**	**$ 13,284,600**	**$ 5,273,500**	**$ 5,787,400**

Line Item Budget and Plan

The five-year plan with a line item expense budget begins on the next page. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883301 - Office of the CIO	**$ 437,900**	**$ 208,200**	**$ (236,500)**	**$ 975,800**	**$ 592,500**	**$ 596,400**	**$ 600,300**	**$ 604,100**
2.1 Salaries & Wages	**404,900**	**160,300**	**365,000**	**369,200**	**369,200**	**369,200**	**369,200**	**369,200**
Salaries & Wages	404,900	160,300	365,000	369,200	369,200	369,200	369,200	369,200
2.3 Overtime	**-**	**500**	**-**	**-**	**-**	**-**	**-**	**-**
Overtime	-	516	-	-	-	-	-	-
2.4 Employee Benefits	**116,200**	**41,800**	**100,500**	**101,200**	**103,200**	**105,200**	**107,200**	**109,200**
Employee Benefits	116,200	41,800	100,500	101,200	103,200	105,200	107,200	109,200
2.6 Personnel Transition Adjustment	**-**	**-**	**(106,100)**	**-**	**-**	**-**	**-**	**-**
Personnel Transition Adjustment			(106,100)					
4.2 Supplies & Other	**116,600**	**34,800**	**116,600**	**118,400**	**120,100**	**122,000**	**123,900**	**125,700**
Memberships, Licenses & Subscriptions	28,600	1,700	28,600	28,600	28,600	28,600	28,600	28,600
Mileage and Parking		100						
Office Supplies	70,000	14,400	70,000	71,400	72,800	74,300	75,800	77,300
Operating Supplies		100						
Training and Internal Meetings	8,000	13,200	8,000	8,200	8,300	8,500	8,700	8,800
Travel	10,000	4,900	10,000	10,200	10,400	10,600	10,800	11,000
Tuition Refund	-	400	-	-	-	-	-	-
4.3 Contractual Services	**168,400**	**-**	**397,500**	**387,000**	**-**	**-**	**-**	**-**
Contract Services-Information Technology	150,400		379,500	387,000				
Telecom, Managed Security & Network Svcs	18,000		18,000					
5.2 Shared Services	**(368,200)**	**(29,200)**	**(1,110,000)**	**-**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(8,500)	(18,600)	(388,500)	-	-	-	-	-
Shared Services Reimbursement	(359,700)	(3,200)	(721,500)		-	-	-	-
Shared Services: Employee Benefit Reimb	-	(7,400)	-	-	-	-	-	-
883311 Project Management Office	**$ 1,102,600**	**$ 401,500**	**$ (671,400)**	**$ 1,622,600**	**$ 1,634,700**	**$ 1,647,200**	**$ 1,659,700**	**$ 1,672,400**
2.1 Salaries & Wages	**775,200**	**349,900**	**856,400**	**1,005,300**	**1,005,300**	**1,005,300**	**1,005,300**	**1,005,300**
Salaries & Wages	775,200	349,900	856,400	1,005,300	1,005,300	1,005,300	1,005,300	1,005,300
2.4 Employee Benefits	**223,800**	**83,600**	**233,900**	**268,200**	**273,400**	**278,700**	**283,900**	**289,200**
Employee Benefits	223,800	83,600	233,900	268,200	273,400	278,700	283,900	289,200
2.5 Transition Services	**230,000**	**-**	**326,700**	**-**	**-**	**-**	**-**	**-**
Contractual Transition Services	230,000		326,700					
4.2 Supplies & Other	**21,600**	**8,300**	**21,600**	**15,900**	**16,100**	**16,500**	**16,900**	**17,200**
Memberships, Licenses & Subscriptions	1,600	100	1,600	1,600	1,600	1,700	1,700	1,700
Mileage and Parking	-	300	-	-	-	-	-	-
Repairs & Maintenance-Software	6,000	4,200	6,000					
Training and Internal Meetings	13,200	1,400	13,200	13,500	13,700	14,000	14,300	14,600
Travel	800	2,300	800	800	800	800	900	900
4.3 Contractual Services	**-**	**300**	**-**	**333,200**	**339,900**	**346,700**	**353,600**	**360,700**
Contract Services-Information Technology				333,200	339,900	346,700	353,600	360,700
Contractual Operating Services	-	300	-	-	-	-	-	-
5.2 Shared Services	**(148,000)**	**(40,600)**	**(2,110,000)**	**-**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(117,700)	(18,600)	(147,700)	-	-	-	-	-
Shared Services Reimbursement	(30,300)	(14,600)	(1,962,300)	-	-	-	-	-
Shared Services: Employee Benefit Reimb	-	(7,400)	-	-	-	-	-	-
883321 - Info Technology Service Delivery	**$ 2,136,300**	**$ 701,300**	**$ 3,371,900**	**$ 3,807,700**	**$ 3,854,200**	**$ 3,898,500**	**$ 3,830,200**	**$ 3,888,200**
2.1 Salaries & Wages	**792,800**	**302,900**	**903,900**	**914,500**	**914,500**	**914,500**	**914,500**	**914,500**
Salaries & Wages	792,800	302,900	903,900	914,500	914,500	914,500	914,500	914,500
2.3 Overtime	**-**	**100**	**-**	**-**	**-**	**-**	**-**	**-**
Overtime		100						
2.4 Employee Benefits	**296,700**	**125,400**	**291,300**	**293,300**	**299,100**	**304,800**	**310,600**	**316,300**
Employee Benefits	296,700	125,400	291,300	293,300	299,100	304,800	310,600	316,300
4.2 Supplies & Other	**1,080,900**	**342,900**	**1,163,500**	**1,429,800**	**1,453,400**	**1,474,700**	**1,493,100**	**1,528,500**
Memberships, Licenses & Subscriptions	5,000		5,000	5,100	5,200	5,300	5,400	5,500
Printing	20,000	2,000	100,000	102,000	104,000	106,100	108,200	110,400
Repairs & Maintenance-Hardware	42,400		42,800	43,700	44,600	45,500	46,400	47,300
Repairs & Maintenance-Miscellaneous			25,500	25,800	26,100	26,400	26,400	27,000
Repairs & Maintenance-Software	450,500	144,500	530,200	756,800	771,400	779,300	784,400	800,500
Training and Internal Meetings	56,000		61,000	61,100	62,300	63,500	64,800	71,000
Telecom, Managed Security & Network Svcs	492,000	194,900	384,000	420,000	424,200	432,700	441,300	450,200
Travel	15,000		15,000	15,300	15,600	15,900	16,200	16,600
Tuition Refund		1,500						
5.2 Shared Services	**(1,159,100)**	**(200,000)**	**(8,100)**	**-**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(473,500)	(91,500)	(8,100)					
Shared Services Reimbursement	(496,200)	(71,900)						
Shared Services: Employee Benefit Reimb	(189,400)	(36,600)						
6.0 Capital Outlay	**1,125,000**	**130,100**	**1,021,300**	**1,170,100**	**1,187,200**	**1,204,500**	**1,112,000**	**1,128,900**
Capital Outlay less than $5,000	1,100,000	111,900		800,000	816,000	832,300	849,000	865,900
Capital Outlay over $5k(O&M-NonCapitlzd)	25,000	18,200	1,021,300	370,100	371,200	372,200	263,000	263,000

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883331 - Info Technology Infrastructure	**$ 14,352,300**	**$ 7,945,108**	**$ 18,357,800**	**$ 19,432,400**	**$ 21,640,600**	**$ 22,431,100**	**$ 22,375,700**	**$ 23,318,800**
2.1 Salaries & Wages	**662,500**	**294,000**	**1,007,300**	**1,056,400**	**1,056,400**	**1,056,400**	**1,056,400**	**1,056,400**
Salaries & Wages	662,500	294,000	1,007,300	1,056,400	1,056,400	1,056,400	1,056,400	1,056,400
2.4 Employee Benefits	**212,900**	**89,900**	**293,600**	**302,600**	**308,600**	**314,500**	**320,400**	**326,400**
Employee Benefits	212,900	89,900	293,600	302,600	308,600	314,500	320,400	326,400
2.5 Transition Services	**296,700**	**73,700**	**168,300**	-	-	-	-	-
Contractual Transition Services	296,700	73,700	168,300					
4.2 Supplies & Other	**1,844,700**	**336,500**	**2,148,900**	**2,167,800**	**2,136,300**	**2,150,000**	**2,211,900**	**2,178,400**
Repairs & Maintenance-Hardware	1,357,700	302,000	2,021,000	1,993,000	2,003,900	2,014,900	2,026,200	2,037,800
Repairs & Maintenance-Software	487,000	34,500	89,100	135,200	92,000	93,900	143,800	97,700
Training and Internal Meetings			20,000	20,400	20,800	21,200	21,600	22,100
Travel			18,800	19,200	19,600	20,000	20,300	20,800
4.3 Contractual Services	**12,370,800**	**5,471,608**	**14,234,800**	**14,534,900**	**14,825,500**	**15,122,100**	**15,424,500**	**15,898,600**
Contract Services-Information Technology	220,800	22,500	384,800	392,500	400,300	408,300	416,500	424,800
Contractual Operating Services	150,000	71,208	550,000	558,000	569,200	580,600	592,200	769,700
Telecom, Managed Security & Network Svcs	12,000,000	5,377,900	13,300,000	13,584,400	13,856,000	14,133,200	14,415,800	14,704,100
5.2 Shared Services	**(2,711,300)**	**(264,400)**	**(2,672,300)**	**(2,371,100)**	-	-	-	-
Shared Services : Salaries & Wages Reimb	(413,200)	(62,400)	(413,200)	(532,000)	-	-	-	-
Shared Services Reimbursement	(2,298,100)	(177,000)	(2,259,100)	(1,839,100)	-	-	-	-
Shared Services: Employee Benefit Reimb		(25,000)			-	-	-	-
6.0 Capital Outlay	**1,676,000**	**1,943,800**	**3,177,200**	**3,741,800**	**3,313,800**	**3,788,100**	**3,362,500**	**3,859,000**
Capital Outlay less than $5,000	687,000	64,600						
Capital Outlay over $5k(O&M-NonCapitlzd)	989,000	1,879,200	3,177,200	3,741,800	3,313,800	3,788,100	3,362,500	3,859,000
883341 - Info Technology Enterprise Applications	**$ 1,075,400**	**$ 831,300**	**$ 3,193,200**	**$ 4,098,700**	**$ 4,063,700**	**$ 4,211,100**	**$ 4,251,900**	**$ 4,222,600**
2.1 Salaries & Wages	**652,500**	**273,500**	**1,099,100**	**1,153,300**	**1,153,300**	**1,153,300**	**1,153,300**	**1,153,300**
Salaries & Wages	652,500	273,500	1,099,100	1,153,300	1,153,300	1,153,300	1,153,300	1,153,300
2.4 Employee Benefits	**189,100**	**81,500**	**310,500**	**320,400**	**326,700**	**333,000**	**339,300**	**345,600**
Employee Benefits	189,100	81,500	310,500	320,400	326,700	333,000	339,300	345,600
2.5 Transition Services	**-**	**-**	**182,200**	**-**	**-**	**-**	**-**	**-**
Contractual Transition Services			182,200					
4.2 Supplies & Other	**440,400**	**311,500**	**617,900**	**630,300**	**642,800**	**655,800**	**668,800**	**682,200**
Mileage and Parking	-	200	-	-	-	-	-	-
Repairs & Maintenance-Software	439,100	307,800	563,100	574,400	585,800	597,600	609,500	621,700
Training and Internal Meetings			34,000	34,700	35,400	36,100	36,800	37,500
Travel	1,300	3,500	20,800	21,200	21,600	22,100	22,500	23,000
4.3 Contractual Services	**775,400**	**432,200**	**487,300**	**1,328,600**	**1,268,600**	**1,390,500**	**1,405,500**	**1,356,500**
Contract Services-Information Technology	775,400	432,200	487,300	1,328,600	1,268,600	1,390,500	1,405,500	1,356,500
5.2 Shared Services	**(991,000)**	**(298,500)**	**(113,800)**	-	-	-	-	-
Shared Services : Salaries & Wages Reimb	(224,700)	(55,000)	(29,700)		-	-	-	-
Shared Services Reimbursement	(676,300)	(221,500)	(84,100)		-	-	-	-
Shared Services: Employee Benefit Reimb	(90,000)	(22,000)			-	-	-	-
6.0 Capital Outlay	**9,000**	**31,100**	**610,000**	**666,100**	**672,300**	**678,500**	**685,000**	**685,000**
Capital Outlay less than $5,000	3,000	25,900				-	-	-
Capital Outlay over $5k(O&M-NonCapitlzd)	6,000	5,200	610,000	666,100	672,300	678,500	685,000	685,000

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883351 - Info Technology Business Applications	**$ 5,043,100**	**$ 1,801,400**	**$ 6,001,100**	**$ 5,913,900**	**$ 6,408,200**	**$ 6,417,700**	**$ 5,531,100**	**$ 5,438,400**
2.1 Salaries & Wages	**768,400**	**380,300**	**959,400**	**1,089,000**	**1,089,000**	**1,089,000**	**1,089,000**	**1,089,000**
Salaries & Wages	768,400	380,300	959,400	1,089,000	1,089,000	1,089,000	1,089,000	1,089,000
2.4 Employee Benefits	**181,200**	**110,800**	**268,100**	**308,600**	**314,700**	**320,700**	**326,800**	**332,800**
Employee Benefits	181,200	110,800	268,100	308,600	314,700	320,700	326,800	332,800
2.5 Transition Services	**37,800**	-	**138,600**	-	-	-	-	-
Contractual Transition Services	37,800		138,600					
4.2 Supplies & Other	**950,000**	**132,900**	**1,407,300**	**1,245,600**	**1,248,500**	**1,250,800**	**3,754,100**	**3,756,600**
Memberships, Licenses & Subscriptions			500	500	500	500	500	600
Repairs & Maintenance-Software	739,900	119,200	1,368,800	1,206,300	1,208,500	1,210,000	3,712,500	3,714,000
Training and Internal Meetings	205,100		20,000	20,400	20,800	21,200	21,600	22,100
Travel	5,000	13,700	18,000	18,400	18,700	19,100	19,500	19,900
4.3 Contractual Services	**4,541,700**	**1,732,600**	**3,166,600**	**4,004,200**	**3,706,000**	**3,707,200**	**311,200**	**210,000**
Contract Services-Information Technology	3,481,700	1,193,700	2,972,600	3,810,200	3,508,100	3,505,300	105,300	
Contractual Operating Services	1,060,000	538,900	194,000	194,000	197,900	201,900	205,900	210,000
5.2 Shared Services	**(2,402,500)**	**(704,000)**	**(265,600)**	**(783,500)**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(226,300)	(107,300)	(180,700)	(75,400)				
Shared Services Reimbursement	(2,176,200)	(553,800)	(84,900)	(708,100)				
Shared Services: Employee Benefit Reimb		(42,900)						
6.0 Capital Outlay	**966,500**	**148,800**	**326,700**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**
Capital Outlay less than $5,000	63,000							
Capital Outlay over $5k(O&M-NonCapitlzd)	903,500	148,800	326,700	50,000	50,000	50,000	50,000	50,000
883361 - Info Technology Security & Risk	**$ 326,000**	**$ (546,300)**	**$ 491,700**	**$ 403,200**	**$ 436,500**	**$ 438,600**	**$ 440,700**	**$ 442,900**
2.1 Salaries & Wages	**225,700**	**110,100**	**206,300**	**290,000**	**290,000**	**290,000**	**290,000**	**290,000**
Salaries & Wages	225,700	110,100	206,300	290,000	290,000	290,000	290,000	290,000
2.4 Employee Benefits	**65,500**	**25,100**	**54,600**	**78,300**	**79,900**	**81,400**	**82,900**	**84,500**
Employee Benefits	65,500	25,100	54,600	78,300	79,900	81,400	82,900	84,500
4.2 Supplies & Other	**63,500**	**(65,000)**	**3,500**	**3,600**	**3,600**	**3,700**	**3,800**	**3,900**
Memberships, Licenses & Subscriptions	3,500		3,500	3,600	3,600	3,700	3,800	3,900
Mileage and Parking	-	100	-	-	-	-	-	-
Repairs & Maintenance-Software	60,000	(65,500)						
Travel	-	400	-	-	-	-	-	-
5.2 Shared Services	**(28,700)**	**(629,900)**	**(82,700)**	**(31,200)**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(20,700)	(27,100)	(82,700)	(31,200)		-	-	-
Shared Services Reimbursement		(592,000)				-	-	-
Shared Services: Employee Benefit Reimb	(8,000)	(10,800)					-	-
6.0 Capital Outlay	**-**	**13,400**	**310,000**	**62,500**	**63,000**	**63,500**	**64,000**	**64,500**
Capital Outlay less than $5,000	-	4,300	-	-	-	-	-	-
Capital Outlay over $5k(O&M-NonCapitlzd)	-	9,100	310,000	62,500	63,000	63,500	64,000	64,500
Grand Total	**$ 24,473,600**	**$ 11,342,508**	**$ 30,507,800**	**$ 36,254,300**	**$ 38,630,400**	**$ 39,640,600**	**$ 38,689,600**	**$ 39,587,400**

Highlights

The Organization Development Area presently is leading GLWA in several strategic initiatives.

- **Apprentice Program is adding a new program. The first class will be graduating from their program in 2020.**
- **•Launch One Water Institute – In 2020 the OWI will provide new, expanded and diverse training opportunities to team members, leadership team members, as well as Member Partners.**
- **Review and update the GLWA handbook, "The Way We Work".**

Organization

The Organizational Development Area consists of a single team.



- **Organizational Development (OD)** – provides recruitment, retention, training, workplace policies, assistance, guidance, benefit coordination, and quality assurance support services to the GLWA and its employees. OD provides opportunities for employees to develop and optimize their talent and deployment of their talent within the organization to support a motivated integrated workforce team that effectively delivers quality, compliant water services to GLWA customers.

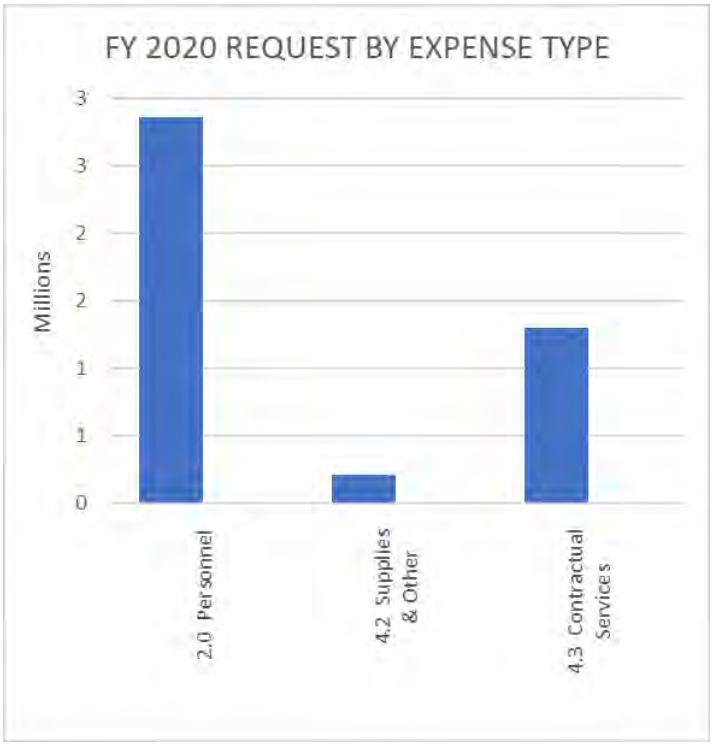
Expense Categories

There are three major categories of Organizational Development expenses in the Operations and Maintenance Budget as listed below.

- Personnel Costs
- Supplies & Other
- Contractual Services

Personnel Costs is the highest expense category for OD. With the launch of the One Water Institute OD will be adding an additional three FTE's in the training area to provide diverse training opportunities throughout GLWA.

Contractual Services is the second highest expense category which includes the contracts for One Water Institute training specialists and online facilitation services.



Biennial Budget Request

The biennial budget reflects an increase in FY 2020 as a result of Organizational Development's launching the new One Water Institute.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 2,069,300	$ 2,137,700	$ 2,763,100	$ 798,398	$ 2,856,100	$ 93,000	3.4%	$ 2,869,100
4.2 Supplies & Other	56,000	58,700	26,500	45,527	210,300	183,800	693.6%	217,700
4.3 Contractual Services	496,700	415,600	350,000	63,642	1,300,000	950,000	271.4%	1,315,600
5.1 Capital Program Allocation	-	-	-	-	-	-	n/a	-
5.2 Shared Services	(6,700)	3,300	(6,700)	(8,566)	-	6,700	-100.0%	-
Grand Total	$ 2,615,300	$ 2,615,300	$ 3,132,900	$ 899,000	$ 4,366,400	$ 1,233,500	39.4%	$ 4,402,400

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Organizational Development	$ 2,615,300	$ 2,615,300	$ 3,132,900	$ 899,000	$ 4,366,400	$ 1,233,500	39.4%	$ 4,402,400
Grand Total	**$ 2,615,300**	**$ 2,615,300**	**$ 3,132,900**	**$ 899,000**	**$ 4,366,400**	**$ 1,233,500**	**39.4%**	**$ 4,402,400**

Personnel Budget

Organizational Development personnel consists of 31 positions for FY 2020, three-staffing positions increase from FY 2019. The increase in staffing is to support the launch of the One Water Institute. Organizational Development will add two training specialists and one office support specialist in first quarter of FY 2020.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Years		Current Year	Biennial Budget		Forecast		
Cost Center	FY 2017 Staffing Plan	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Organizational Development	**21.00**	**28.00**	**28.00**	**31.00**	**31.00**	**31.00**	**31.00**	**31.00**
Organizational Development	21.00	28.00	28.00	31.00	31.00	31.00	31.00	31.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Years		Current Year	Biennial Budget		Forecast		
Cost Center	FY 2017 FTE's	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Organizational Development	**21.00**	**28.00**	**28.00**	**31.00**	**31.00**	**31.00**	**31.00**	**31.00**
Organizational Development	21.00	28.00	28.00	31.00	31.00	31.00	31.00	31.00

Personnel Budget - The table below presents the Organizational Development personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

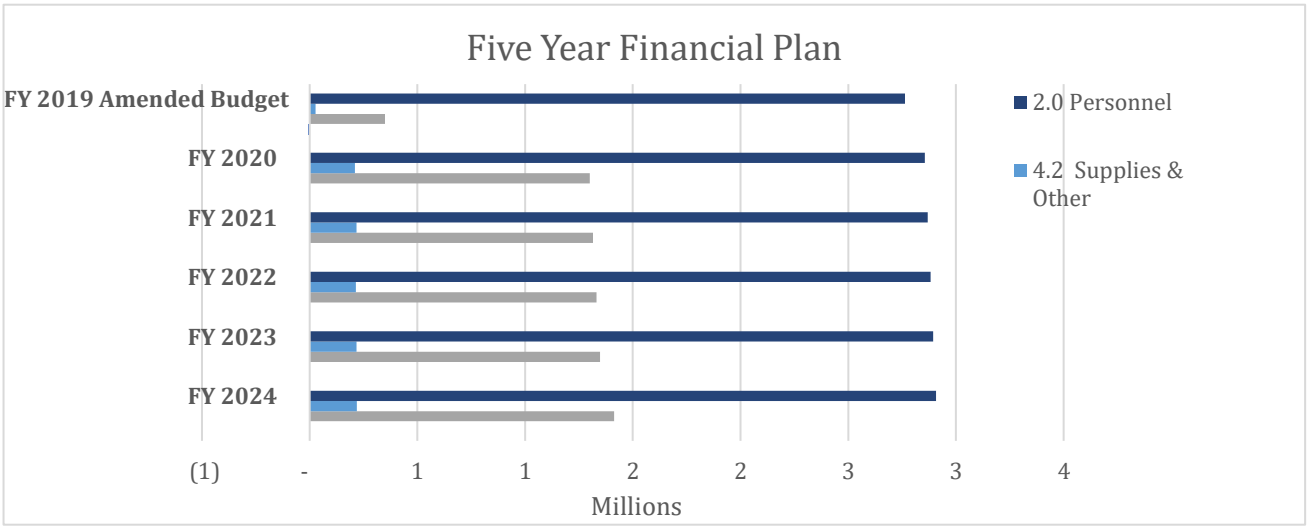
Personnel Budget

	Current Year	Biennial Budget		Forecast		
Cost Center	FY 2019 Approved Budget	FY 2020 Requested Budget	FY 2021 Requested Budget	FY 2022 Requested Budget	FY 2023 Requested Budget	FY 2024 Requested Budget
Organizational Development	**$ 2,763,100**	**$ 2,856,100**	**$ 2,869,100**	**$ 2,882,100**	**$ 2,895,000**	**$ 2,908,000**
Organizational Development	2,763,100	2,856,100	2,869,100	2,882,100	2,895,000	2,908,000

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 2,763,100	$ 2,856,100	$ 93,000	3.4%	$ 2,869,100	$ 2,882,100	$ 2,895,000	$ 2,908,000
4.2 Supplies & Other	26,500	210,300	183,800	693.6%	217,700	214,600	217,000	219,100
4.3 Contractual Services	350,000	1,300,000	950,000	271.4%	1,315,600	1,331,500	1,347,700	1,413,000
5.2 Shared Services	(6,700)	-	6,700	-100.0%	-	0	0	0
Grand Total	$ 3,132,900	$ 4,366,400	$ 1,233,500	39.4%	$ 4,402,400	$ 4,428,200	$ 4,459,700	$ 4,540,100



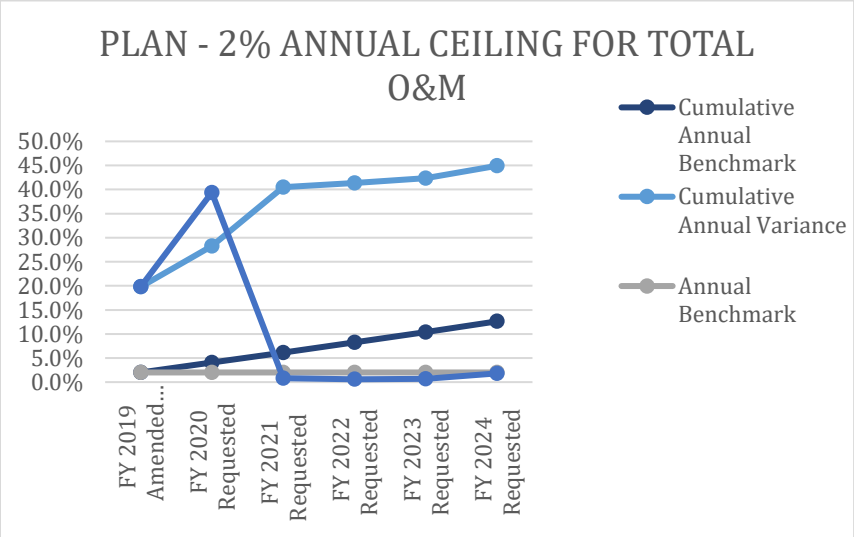
Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Organizational Development	$ 3,132,900	$ 4,366,400	$ 1,233,500	39.4%	$ 4,402,400	$ 4,428,200	$ 4,459,700	$ 4,540,100
Grand Total	$ 3,132,900	$ 4,366,400	$ 1,233,500	39.4%	$ 4,402,400	$ 4,428,200	$ 4,459,700	$ 4,540,100

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Organizational Development Group's financial plan reflects a Five Year Overall increase of 15.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".

This increase is not unexpected given the extensive training the One Water Institute will provide to GLWA as whole. While there is an increased expense in the short-term, it is believed that the implementation of the One Water Institute will make GLWA a leader in the industry.



Effective Utility Management Measures

"Open for 1.2019 Revised Draft."

Line Item Budget and Financial Plan

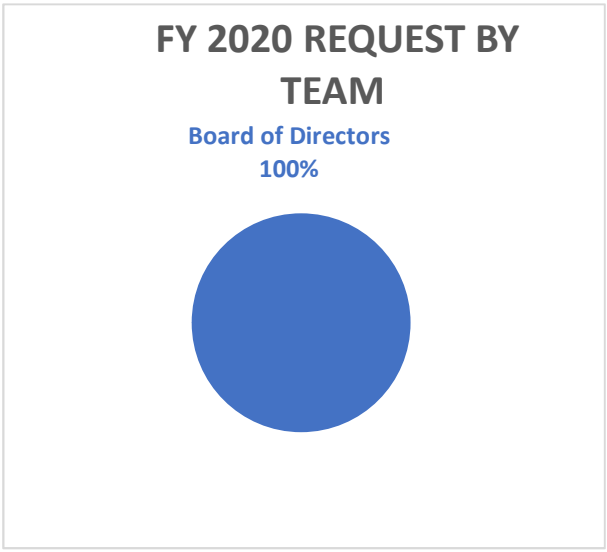
The five-year plan with a line item expense budget begins on the next page. The expenses are listed in alphabetical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883201 - Organizational Development	**$ 3,455,100**	**$ 745,446**	**$ 3,132,900**	**$ 3,467,700**	**$ 3,488,900**	**$ 3,510,200**	**$ 3,531,600**	**$ 3,602,400**
2.1 Salaries & Wages	**1,624,200**	**1,688,800**	**2,143,800**	**2,194,100**	**2,194,100**	**2,194,100**	**2,194,100**	**2,194,100**
Salaries & Wages	1,624,200	1,688,800	2,143,800	2,194,100	2,194,100	2,194,100	2,194,100	2,194,100
2.3 Overtime	**-**	**4,100**	**-**	**-**	**-**	**-**	**-**	**-**
Overtime	-	4,100	-	-	-	-	-	-
2.4 Employee Benefits	**445,100**	**444,800**	**619,300**	**662,000**	**675,000**	**688,000**	**700,900**	**713,900**
Employee Benefits	445,100	444,800	619,300	662,000	675,000	688,000	700,900	713,900
4.2 Supplies & Other	**56,000**	**62,800**	**26,500**	**210,300**	**217,700**	**214,600**	**217,000**	**219,100**
Memberships, Licenses & Subscriptions	4,000	1,600	1,500	2,500	2,600	2,600	2,600	2,700
Mileage and Parking	-	1,800	-	-	-	-	-	-
Office Supplies	10,000	23,100		24,500	24,700	25,000	25,300	25,500
Operating Supplies		1,800		39,000	39,400	39,800	40,200	40,600
Postage	2,000	-	-	-	-	-	-	-
Printing	10,000	4,600	5,000	20,000	25,400	20,400	20,600	20,800
Training and Internal Meetings	20,000	23,900	20,000	60,500	61,100	61,700	62,400	63,000
Travel	-	4,800	-	5,000	5,100	5,100	5,200	5,200
Tuition Refund	10,000	1,200		12,000	12,100	12,200	12,400	12,500
Advertising	-	-	-	46,800	47,300	47,800	48,300	48,800
4.3 Contractual Services	**496,700**	**415,600**	**350,000**	**1,300,000**	**1,315,600**	**1,331,500**	**1,347,700**	**1,413,000**
Contractual Operating Services	496,700	415,600	350,000	1,300,000	1,315,600	1,331,500	1,347,700	1,413,000
5.2 Shared Services	**(6,700)**	**3,300**	**(6,700)**	**-**	**-**	**-**	**-**	**-**
Shared Services Reimbursement	(6,700)	3,300	(6,700)	-	-	-	-	-
205 Capital Outlay		**-**	**-**	**-**	**-**	**-**	**-**	**-**
Capital Outlay over $5k(I&E-Capitalized)		-	-	-	-	-	-	-
Grand Total	**$ 2,615,300**	**$ 2,615,300**	**$ 3,132,900**	**$ 4,366,400**	**$ 4,402,400**	**$ 4,428,200**	**$ 4,459,700**	**$ 4,540,100**

Organization

The Board of Directors is composed of six voting members. Two members are residents of the City of Detroit and are appointed by the Mayor of the city. The counties of Wayne, Oakland, and Macomb each appoint one member who is a resident of the county from which appointed. The Governor of the state of Michigan appoints one member who is a resident of an area served by GLWA that is outside of the three counties.

Board of Directors –is a governing body that brings together representatives from the surrounding counties to set policies that help GLWA execute its mission and vision in the long-term to ensure GLWA is a provider of choice for water and wastewater services in Southeast Michigan.

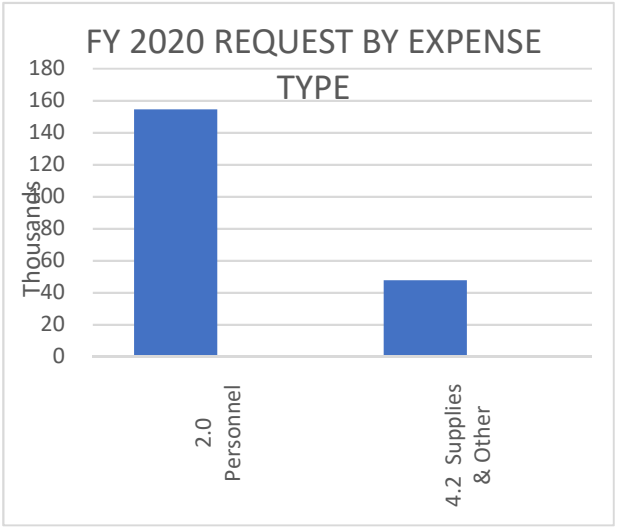


Expense Categories

The primary cost driver in the Board of Directors' area is Salaries, Wages and Benefits which is the category in which the Board's stipends are recorded. Budget to actual variances are recognized when a Board member opts out of receiving the monthly stipend.

Other smaller, but significant expenditures are captured in the following areas:

- Memberships, Licenses & Subscriptions
- Travel
- Training & Internal Meetings



Biennial Budget Request

The biennial budget reflects an increase in FY 2020 which aligns with the entity-wide ceiling goal of 2% for Operations & Maintenance.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 126,000	$ 126,000	$151,500	$ 33,600	$ 154,500	$ 3,000	2.0%	$ 157,600
4.2 Supplies & Other	3,000	3,100	47,000	1,088	47,900	900	1.9%	48,900
Grand Total	$ 129,000	$ 129,100	$198,500	$ 34,688	$ 202,400	$ 3,900	2.0%	$ 206,500

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Board of Directors	$ 129,000	$ 129,100	$ 198,500	$ 34,688	$ 202,400.0	$ 3,900	2.0%	$ 206,500
Grand Total	**$ 129,000**	**$ 129,100**	**$198,500**	**$ 34,688**	**$ 202,400**	**$ 3,900**	**2.0%**	**$ 206,500**

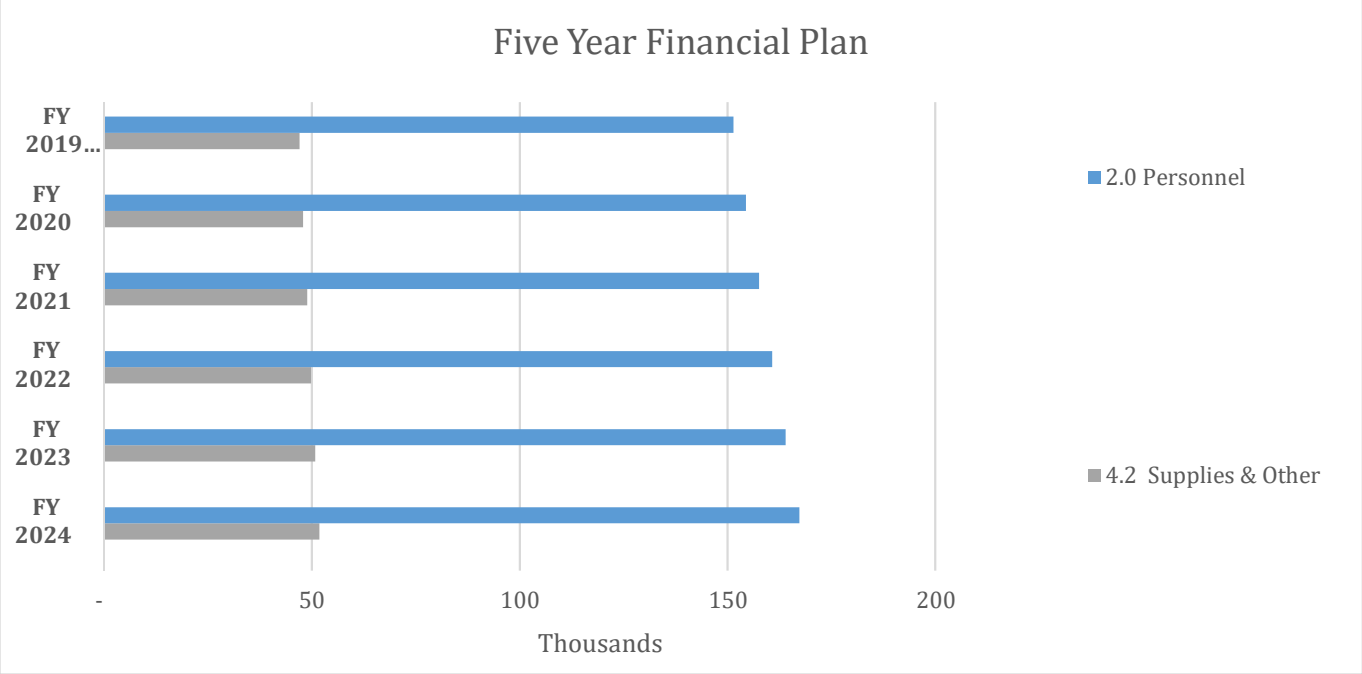
Personnel Budget

The Board of Directors' Area is not reported in the GLWA Staffing Plan and Full-time Equivalents tables.

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Personnel	$ 151,500	$ 154,500	$ 3,000	2.0%	$ 157,600	$ 160,800	$ 164,000	$ 167,300
4.2 Supplies & Other	47,000	47,900	900	1.9%	48,900	49,800	50,800	51,800
Grand Total	$ 198,500	$ 202,400	$ 3,900	2.0%	$ 206,500	$ 210,600	$ 214,800	$ 219,100

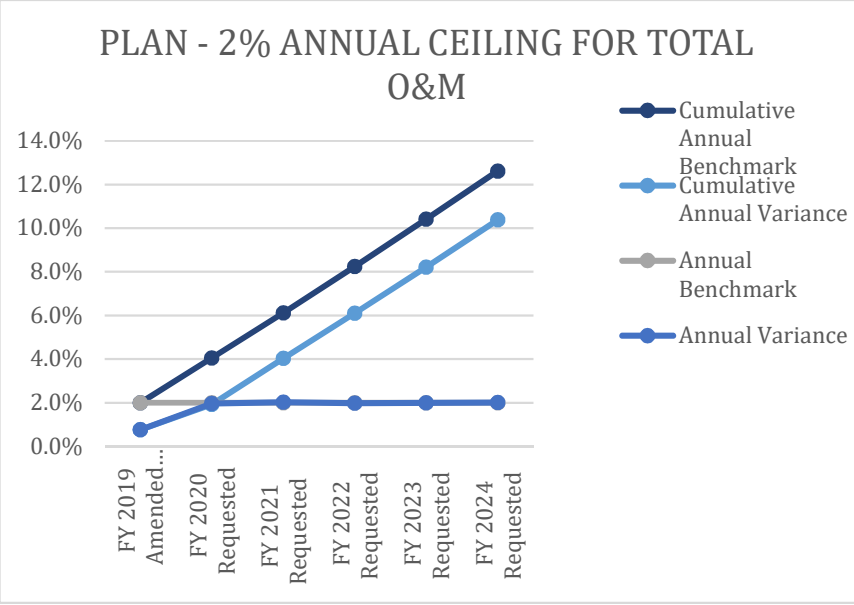


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Board of Directors	$ 198,500	$ 202,400	$ 3,900	2.0%	$ 206,500	$ 210,600	$ 214,800	$ 219,100
Grand Total	**$ 198,500**	**$ 202,400**	**$ 3,900**	**2.0%**	**$ 206,500**	**$ 210,600**	**$ 214,800**	**$ 219,100**

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Board of Directors' financial plan reflects a Five Year Overall increase of 10.4% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment).



Effective Utility Management Measures

Open for 1.2019 revised draft

Capital Outlay

Capital Outlay is not a component of the Board of Directors' Area.

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget is shown below. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Line Item Budget and Financial Plan

Expense Category	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
881151 - Board of Directors	**$ 129,000**	**$ 129,100**	**$ 198,500**	**$ 202,400**	**$ 206,500**	**$ 210,600**	**$ 214,800**	**$ 219,100**
2.1 Salaries & Wages	**126,000**	**126,000**	**151,500**	**154,500**	**157,600**	**160,800**	**164,000**	**167,300**
4.2 Supplies & Other	**3,000**	**3,100**	**47,000**	**47,900**	**48,900**	**49,800**	**50,800**	**51,800**
Inspection and Permit Fees	-	-	7,000	7,100	7,300	7,400	7,600	7,700
Memberships, Licenses & Subscriptions	-	-	10,000	10,200	10,400	10,600	10,800	11,000
Office Supplies	-	-	5,000	5,100	5,200	5,300	5,400	5,500
Training and Internal Meetings	-	-	10,000	10,200	10,400	10,600	10,800	11,000
Travel	3,000	3,100	15,000	15,300	15,600	15,900	16,200	16,600

Highlights

In conjunction with the GLWA Board, the Chief Executive Officer's initiatives established for FY 2019 span multiple years and speak to the values that are foundational to the establishment of GLWA.

- **Environmental Regulatory Compliance**
- **Financial Resiliency and Charge Equity and Stability**
- **Capital and Operational Utility Optimization**
- **Member Partner Engagement and Satisfaction**
- **GLWA Team Member Support and Retention**
- **GLWA 4% Promise to contain revenue requirement**

Organization

Through the leadership of the Chief Executive Officer, GLWA, through its team members and in conjunction with its Board and Member Partners, strives to achieve its mission and vison.

OUR MISSION: To exceed our customers' expectations by utilizing best practices in the treatment and transmission of water and wastewater, while promoting healthy communities and economic growth.

OUR VISION: Through regional collaboration, GLWA strives to be the provider of choice, dedicated to efficiently delivering the nation's best water and sewer services in partnership with our customers.

- **Chief Executive Officer** – Responsible for the day-to-day supervision and management of the affairs of the utility, including establishing and delineating organizational goals and objectives which further GLWA's mission and values.

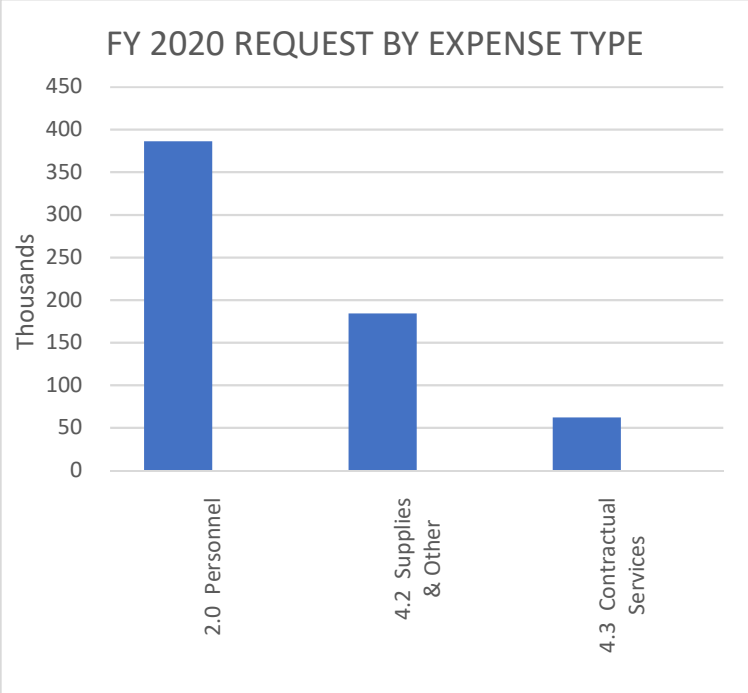


Expense Categories

The Chief Executive Officer's Area consists of three major expense categories:

- Personnel
- Supplies & Other
- Contractual Services

Based upon the nature of this service area, the highest category of expense is salaries. The second highest, Supplies & Other, provides for training and organizational memberships.



Biennial Budget Request

The biennial budget reflects an increase in FY 2020 which is in close alignment with the entity-wide ceiling goal of 2.0% for Operations & Maintenance.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 356,900	$ 357,300	$ 377,100	$ 119,607	$ 386,400	$ 9,300	2.5%	$ 387,800
4.2 Supplies & Other	138,100	138,300	178,600	56,970	184,300	5,700	3.2%	188,100
4.3 Contractual Services	-	-	60,800	-	62,000	1,200	2.0%	63,400
6.0 Capital Outlay	6,000	5,500	-	-	-	-	0.0%	-
Grand Total	$ 501,000	$ 501,100	$ 616,500	$ 176,577	$ 632,700	$16,200	2.6%	$ 639,300

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Chief Executive Officer	$ 501,000	$ 501,100	$ 616,500	$ 176,577	$ 632,700	$ 16,200	2.6%	$ 639,300
Grand Total	$ 501,000	$ 501,100	$616,500	$ 176,577	$ 632,700	$16,200	2.6%	$ 639,300

Personnel Budget

The staffing plan provides for the Chief Executive Officer and administrative support. This is consistent with the staffing plans of prior years.

The following tables provides three alternate views of the staffing plans and budget.

Staffing Plan – the table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Chief Executive Officer	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**
Chief Executive Officer	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Full Time Equivalents – the table below presents, "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full Time Equivalents

	Prior Year	Currrent Year	Biennial Budget		Forecast		
Team	FY 2018 Approved FTEs	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Chief Executive Officer	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**
Chief Executive Officer	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Personnel Budget - the table below presents the Chief Executive Officer's personnel budget which consists of the following expense categories: Salaries & Wages and Employee Benefits.

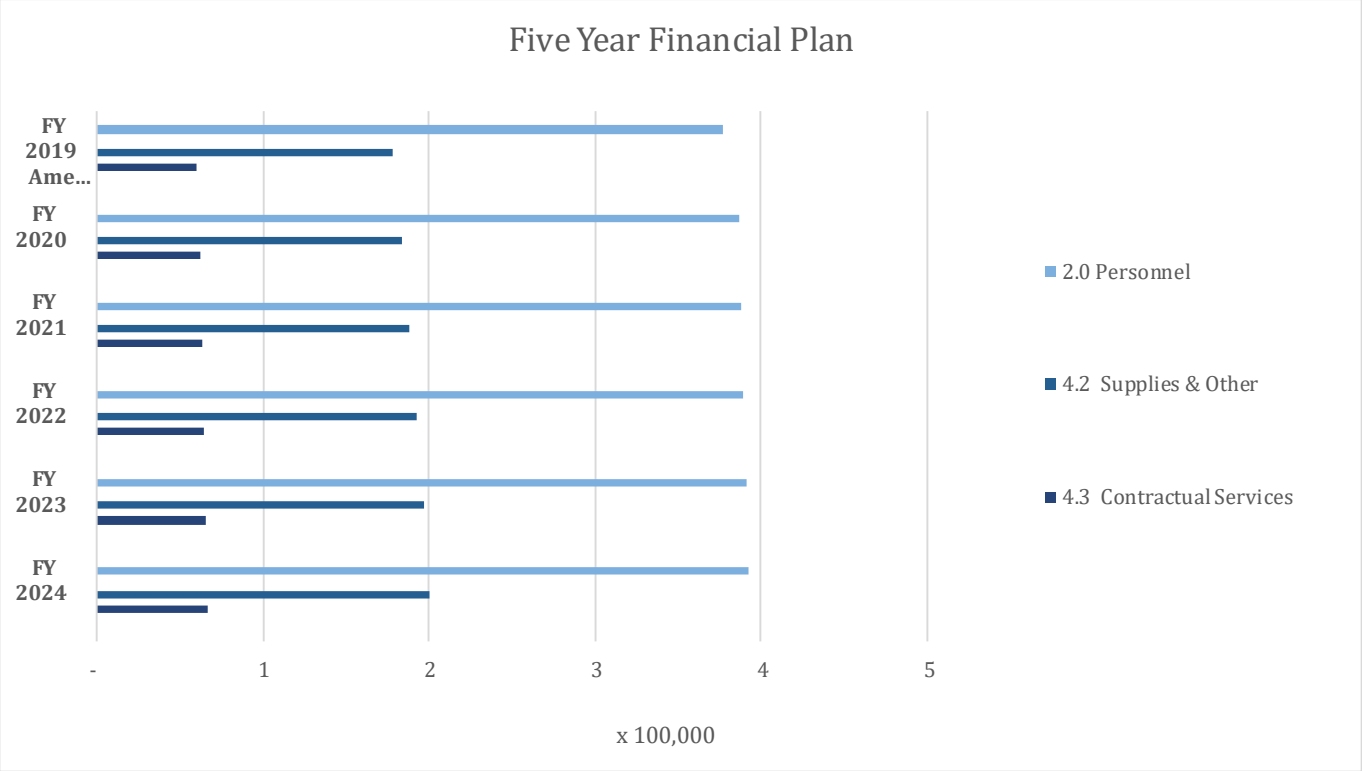
Personnel Budget

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Chief Executive Officer	$ 377,100	$ 386,400	$ 387,800	$ 389,300	$ 390,700	$ 392,200
Grand Total	**$ 377,100**	**$ 386,400**	**$ 387,800**	**$ 389,300**	**$ 390,700**	**$ 392,200**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Personnel	$ 377,100	$ 386,400	$ 9,300	2.5%	$ 387,800	$ 389,300	$ 390,700	$ 392,200
4.2 Supplies & Other	178,600	184,300	5,700	3.2%	188,100	192,700	196,600	200,500
4.3 Contractual Services	60,800	62,000	1,200	2.0%	63,400	64,600	65,800	67,200
Grand Total	$ 616,500	$ 632,700	$ 16,200	2.6%	$ 639,300	$ 646,600	$ 653,100	$ 659,900

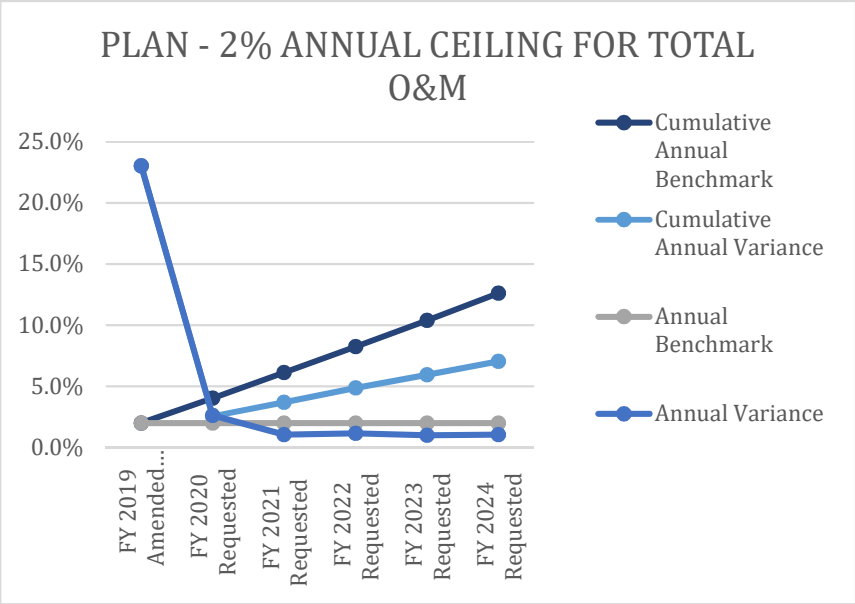


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Chief Executive Officer	$ 616,500	632,700	16,200	2.6%	$ 639,300	$ 646,600	$ 653,100	$ 659,900
Grand Total	**$ 616,500**	**$ 632,700**	**$16,200**	**2.6%**	**$ 639,300**	**$ 646,600**	**$ 653,100**	**$ 659,900**

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Chief Executive Officer's financial plan reflects a Five Year Overall increase of 7.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments is included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

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Capital Outlay

Capital Outlay is not a component of the Chief Executive Officer Area.

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget is shown below. The expenses are listed in alphabetical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Line Item Budget and Financial Plan

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
881001 - Chief Executive Officer	**$ 501,000**	**$ 501,100**	**$ 616,500**	**$ 632,700**	**$ 639,300**	**$ 646,600**	**$ 653,100**	**$ 659,900**
2.1 Salaries & Wages	**313,000**	**312,900**	**304,500**	**311,100**	**311,100**	**311,100**	**311,100**	**311,100**
2.4 Employee Benefits	**43,900**	**44,400**	**72,600**	**75,300**	**76,700**	**78,200**	**79,600**	**81,100**
4.2 Supplies & Other	**138,100**	**138,300**	**178,600**	**184,300**	**188,100**	**192,700**	**196,600**	**200,500**
Memberships, Licenses & Subsc	75,100	75,700	101,100	103,100	105,200	107,300	109,400	111,600
Mileage and Parking	42,500	42,100	45,200	48,200	49,200	51,100	52,200	53,200
Miscellaneous Expense	500	100	-	-	-	-	-	-
Office Supplies	7,500	7,300	10,100	10,300	10,500	10,700	10,900	11,200
Training and Internal Meetings	4,500	4,900	7,100	7,200	7,400	7,500	7,700	7,800
Travel	8,000	8,200	15,100	15,500	15,800	16,100	16,400	16,700
4.3 Contractual Services	-	-	**60,800**	**62,000**	**63,400**	**64,600**	**65,800**	**67,200**
Contractual Professional Servic	-	-	30,400	31,000	31,700	32,300	32,900	33,600
Legal	-	-	30,400	31,000	31,700	32,300	32,900	33,600
6.0 Capital Outlay	**6,000**	**5,500**	-	-	-	-	-	-

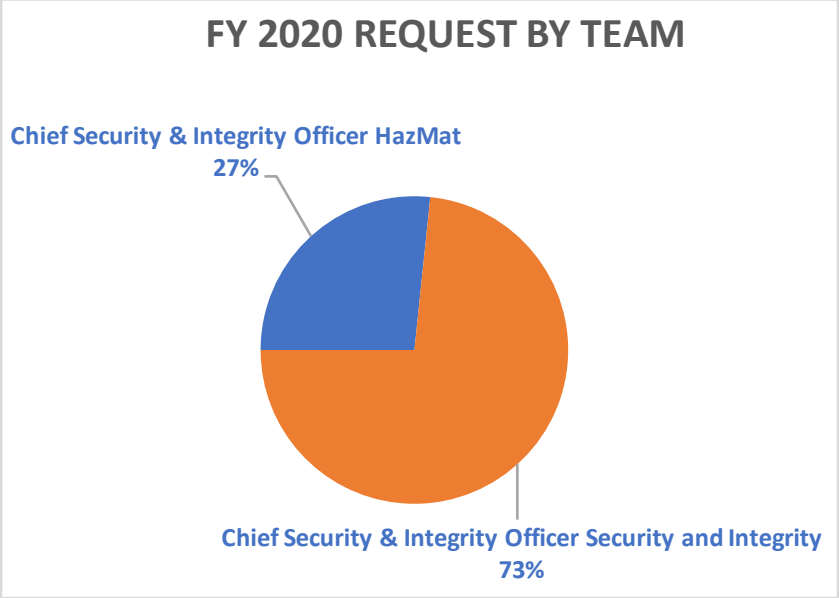
Highlights

The Security and Integrity Area presently is leading GLWA in several strategic initiatives.

- **Establishment of a Canine Bomb Dog program.**
- **Establishment of a Drone surveillance/ patrol program.**
- **Enhancement of the protective fencing for the Clor/De-Clor facility.**
- **Completing the Business Continuity Planning (COOP).**
- **Completing the HazMat Units Firefighter #1 & #2 certifications.**

Organization

The Security and Integrity Area consists of two teams.



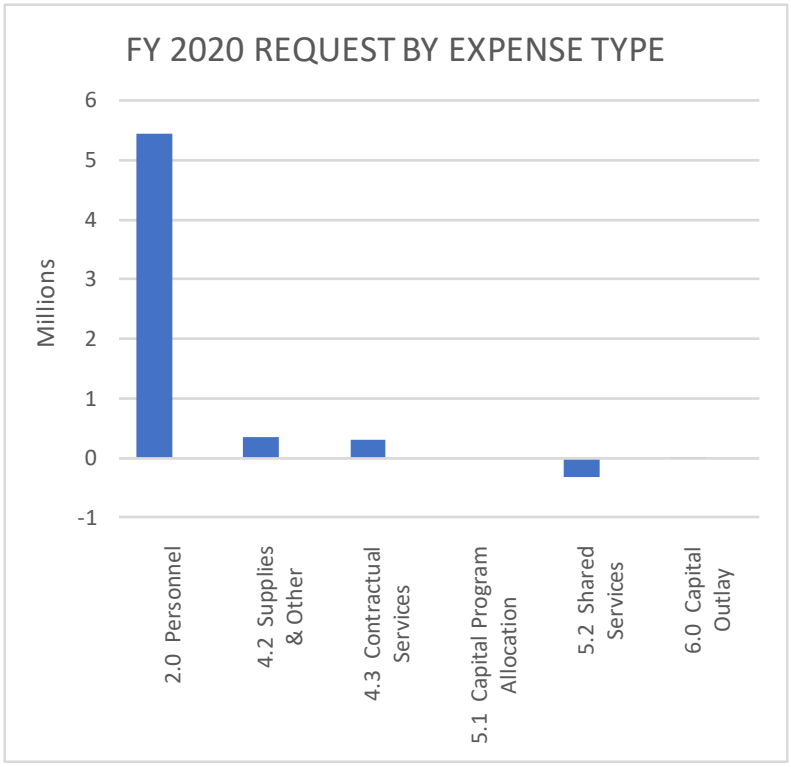
- **Security and Integrity** – provide high quality, professional security operations and technical intelligence for the organization and its valued customers throughout Michigan.
- **HazMat** - in-house delivery service within the Security & Integrity Group who perform immediate response to all Level (1) Hazmat calls on the property of Water Resource Recovery Facility (WRRF). This team provides three mains services; immediate response to all HazMat discharges on WRRFP, provide the same high professional security operations for DMT and provide confined space rescue standby for GLWA employees at WRRF.

Expense Categories

There are three major categories of Security and Integrity expenses in the Operations and Maintenance Budget as listed below.

- Personnel Costs
- Supplies & Other
- Contractual Services

Personnel is the highest expense category for the Security and Integrity Area. In FY 2020 one additional security officer will be added in the first quarter to Security and two hazmat security specialists will be added to HazMat to support the key initiatives listed above.



Biennial Budget Request

The biennial budget reflects a decrease in FY 2020 as a result of the initial start-up costs to establish HazMat are no longer required.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 4,978,700	$ 4,980,100	$ 4,991,700	$ 1,790,559	$ 5,431,500	$ 439,800	8.8%	$ 5,459,000
4.2 Supplies & Other	250,700	251,500	883,300	185,366	353,000	(530,300)	-60.0%	358,400
4.3 Contractual Services	307,500	307,600	307,900	75,010	314,100	6,200	2.0%	320,300
5.1 Capital Program Allocation	-	-	(23,400)	-	-	23,400	-100.0%	-
5.2 Shared Services	(585,500)	(585,500)	(284,500)	-	(325,000)	(40,500)	14.2%	(331,500)
6.0 Capital Outlay	-	-	25,000	-	25,500	500	2.0%	105,800
Grand Total	$ 4,951,400	$ 4,953,700	$ 5,900,000	$ 2,050,935	$ 5,799,100	$ (100,900)	-1.7%	$ 5,912,000

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Chief Security & Integrity Officer	**$ 4,951,400**	**$ 4,953,700**	**$ 5,900,000**	**$ 2,050,935**	**$ 5,799,100**	**$ (100,900)**	**-1.7%**	**$ 5,912,000**
HazMat	402,800	402,700	1,347,200	571147.23	1,545,500	198,300	14.7%	1,622,300
Security and Integrity	4,548,600	4,551,000	4,552,800	1479787.78	4,253,600	(299,200)	-6.6%	4,289,700
Grand Total	**$ 4,951,400**	**$ 4,953,700**	**$ 5,900,000**	**$ 2,050,935**	**$ 5,799,100**	**$ (100,900)**	**-1.7%**	**$ 5,912,000**

Personnel Budget

The Security and Integrity Area consists of 79 positions in FY 2020. In first quarter of FY 2020 one additional security officer will be added in the first quarter to Security and two hazmat security specialists will be added to HazMat to support their key initiatives.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Security and Integrity Area	**89.00**	**76.00**	**79.00**	**79.00**	**79.00**	**79.00**	**79.00**
Security	89.00	59.00	60.00	60.00	60.00	60.00	60.00
HazMat	0.00	17.00	19.00	19.00	19.00	19.00	19.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Security and Integrity Area	**82.00**	**88.50**	**75.50**	**79.00**	**79.00**	**79.00**	**79.00**
Security	82.00	88.50	58.50	60.00	60.00	60.00	60.00
HazMat	0.00	0.00	17.00	19.00	19.00	19.00	19.00

Personnel Budget - The table below presents the Security & Integrity personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

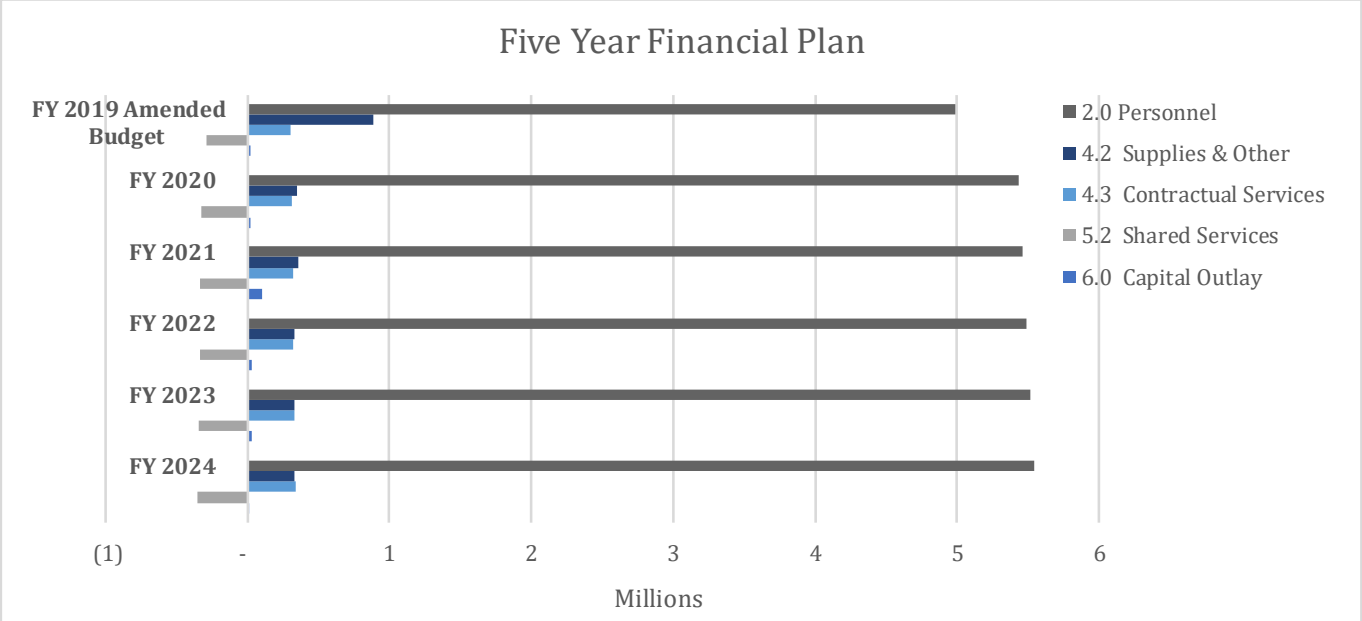
Personnel Budget

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Security	$ 3,820,700	$ 3,986,900	$ 4,007,400	$ 4,027,800	$ 4,048,200	$ 4,068,700
HazMat	1,171,000	1,444,600	1,451,600	1,458,600	1,465,700	1,472,700
Grand Total	**$ 4,991,700**	**$ 5,431,500**	**$ 5,459,000**	**$ 5,486,400**	**$ 5,513,900**	**$ 5,541,400**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 4,991,700	$ 5,431,500	$ 439,800	8.8%	$ 5,459,000	$ 5,486,400	$ 5,513,900	$ 5,541,400
4.2 Supplies & Other	883,300	353,000	(530,300)	-60.0%	358,400	327,800	327,300	333,800
4.3 Contractual Services	307,900	314,100	6,200	2.0%	320,300	326,700	333,300	339,900
5.2 Shared Services	(284,500)	(325,000)	(40,500)	14.2%	(331,500)	(338,100)	(344,800)	(351,700)
6.0 Capital Outlay	25,000	25,500	500	2.0%	105,800	30,700	31,300	9,200
Grand Total	$ 5,923,400	$ 5,799,100	$ (124,300)	-2.1%	$ 5,912,000	$ 5,833,500	$ 5,861,000	$ 5,872,600

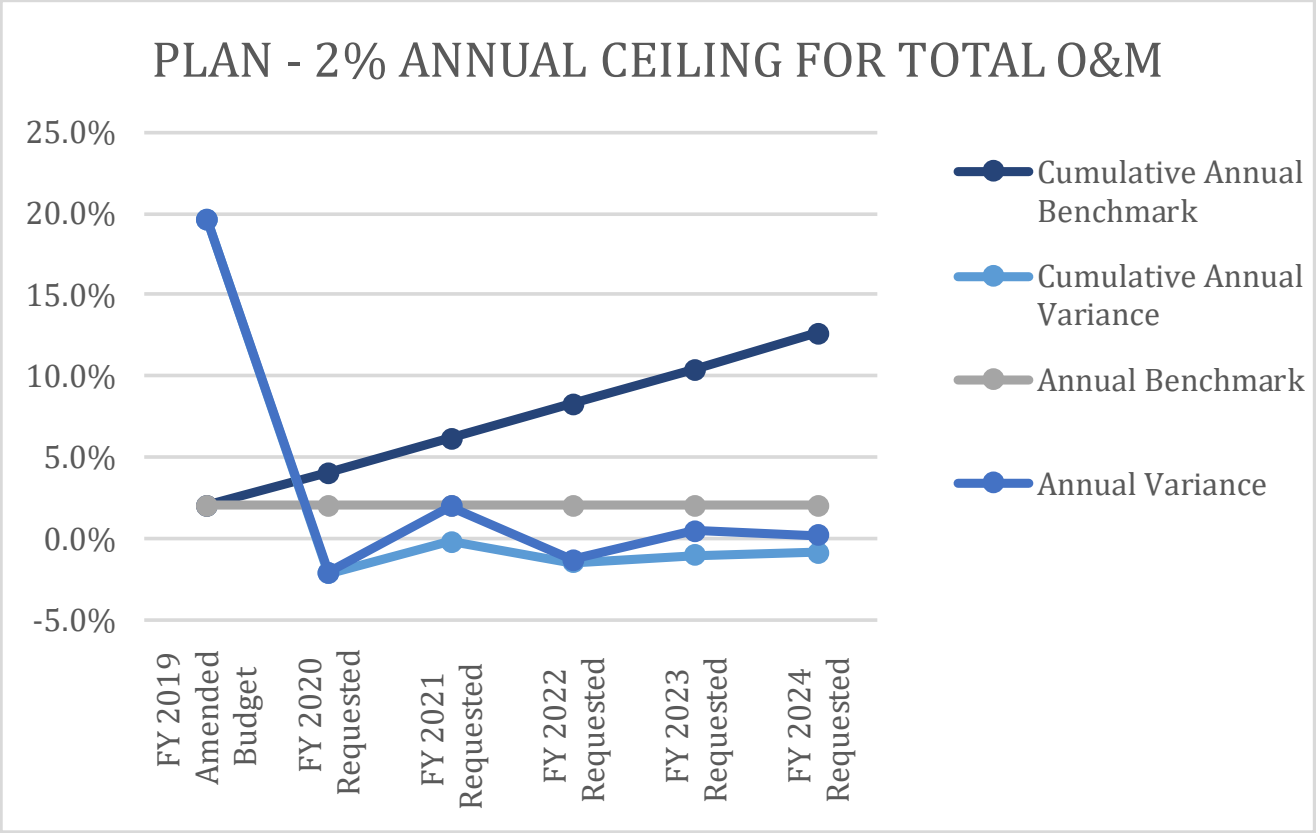


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
HazMat	$ 1,347,200	$ 1,545,500	$ 198,300	14.7%	$ 1,622,300	$ 1,557,200	$ 1,561,900	$ 1,549,800
Security and Integrity	4,576,200	4,253,600	(322,600)	-7.0%	4,289,700	4,276,300	4,299,100	4,322,800
Grand Total	$ 5,923,400	$ 5,799,100	$ (124,300)	-2.1%	$ 5,912,000	$ 5,833,500	$ 5,861,000	$ 5,872,600

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Security and Integrity Area financial plan reflects a Five Year Overall decrease of 0.5% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

"Open for 1.2019 Revised Draft."

Capital Outlay

The Security and Integrity Area capital outlay is funded by both the O&M budget and the I&E budget.

Capital Outlay by Asset Category

Asset Category	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Access Control, Surveillance	$ 2,346,400	$ 2,187,600	$ 1,700,600	$ -	$ -
Safety Equipment	38,100	105,800	30,700	31,300	9,200
Grand Total	**$ 2,384,500**	**$ 2,293,400**	**$ 1,731,300**	**$ 31,300**	**$ 9,200**

Capital Outlay by Funding Source

Asset Funding Source	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
I&E	$ 2,346,400	$ 2,187,600	$ 1,700,600	$ -	$ -
O&M	38,100	105,800	30,700	31,300	9,200
Grand Total	**$ 2,384,500**	**$ 2,293,400**	**$ 1,731,300**	**$ 31,300**	**$ 9,200**

Capital Outlay by Team

Team	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
HazMat	$ 38,100	$ 105,800	$ 30,700	$ 31,300	$ 9,200
Security and Integrity	2,346,400	2,187,600	1,700,600	-	-
Grand Total	**$ 2,384,500**	**$ 2,293,400**	**$ 1,731,300**	**$ 31,300**	**$ 9,200**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
881201 - Security and Integrity	$ 4,548,600	$ 4,551,000	$ 4,552,800	$ 4,253,600	$ 4,289,700	$ 4,276,300	$ 4,299,100	$ 4,322,800
2.1 Salaries & Wages	**2,919,600**	**2,919,400**	**2,609,600**	**2,780,300**	**2,780,300**	**2,780,300**	**2,780,300**	**2,780,300**
Salaries & Wages	2,919,600	2,919,400	2,609,600	2,780,300	2,780,300	2,780,300	2,780,300	2,780,300
2.3 Overtime	**289,700**	**289,600**	**219,700**	**164,400**	**164,400**	**164,400**	**164,400**	**164,400**
Overtime	289,700	289,600	219,700	164,400	164,400	164,400	164,400	164,400
2.4 Employee Benefits	**1,437,900**	**1,439,400**	**991,400**	**1,042,200**	**1,062,700**	**1,083,100**	**1,103,500**	**1,124,000**
Employee Benefits	1,437,900	1,439,400	991,400	1,042,200	1,062,700	1,083,100	1,103,500	1,124,000
4.2 Supplies & Other	**179,400**	**180,500**	**732,100**	**277,600**	**293,500**	**259,900**	**262,400**	**265,900**
Memberships, Licenses & Subscriptions	23,100	21,600	23,100	23,600	24,000	24,500	25,000	25,500
Mileage and Parking			200	200	200	200	200	200
Office Supplies	17,800	17,800	10,100	20,300	20,500	20,700	20,900	21,200
Operating Supplies	57,000	57,800	524,200	82,000	94,800	57,800	57,000	57,000
Training and Internal Meetings	18,000	19,900	58,400	59,500	60,700	62,000	63,200	64,500
Travel	7,500	7,500	15,100	15,500	15,800	16,100	16,400	16,700
Tuition Refund	13,000	12,900						
Uniforms, Laundry, Cleaning			50,500	25,000	25,000	25,000	25,000	25,000
Utilities-Water								
Employee Uniform Expense	43,000	43,000	50,500	51,500	52,500	53,600	54,700	55,800
Inspection and Permit Fees								
Repairs & Maintenance-Facilities								
4.3 Contractual Services	**307,500**	**307,600**	**307,900**	**314,100**	**320,300**	**326,700**	**333,300**	**339,900**
Contractual Operating Services	307,500	307,600	297,900	303,900	309,900	316,100	322,500	328,900
Contractual Security Services			10,000	10,200	10,400	10,600	10,800	11,000
5.2 Shared Services	**(585,500)**	**(585,500)**	**(284,500)**	**(325,000)**	**(331,500)**	**(338,100)**	**(344,800)**	**(351,700)**
Shared Services : Salaries & Wages Reimb	(374,500)	(374,500)	(284,500)	(275,000)	(280,500)	(286,100)	(291,800)	(297,600)
Shared Services Reimbursement	(68,600)	(68,600)		(50,000)	(51,000)	(52,000)	(53,000)	(54,100)
Shared Services: Employee Benefit Reimb	(142,400)	(142,400)						
5.1 Capital Program Allocation	-	-	**(23,400)**	-	-	-	-	-
Capital Program: Salaries & Wages-Direct			(23,400)					
Capital Program: Salaries & Wages-Indire	-	-	-	-	-	-	-	-
6.0 Capital Outlay	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Capital Outlay less than $5,000	-	-	-	-	-	-	-	-
Capital Outlay over $5k(O&M-Capitalized)	-	-	-	-	-	-	-	-
9.8 Financial Reporting Only (No Budget)	-	-	-	-	-	-	-	-
Capital Outlay less than $5,000								
Capital Outlay over $5k(O&M-Capitalized)								
881202 - HazMat	$ 402,800	$ 402,700	$ 1,347,200	$ 1,545,500	$ 1,622,300	$ 1,557,200	$ 1,561,900	$ 1,549,800
2.1 Salaries & Wages	**256,000**	**256,500**	**838,400**	**991,000**	**991,000**	**991,000**	**991,000**	**991,000**
Salaries & Wages	256,000	256,500	838,400	991,000	991,000	991,000	991,000	991,000
2.3 Overtime	-	**200**	**30,800**	**95,300**	**95,300**	**95,300**	**95,300**	**95,300**
Overtime		200	30,800	95,300	95,300	95,300	95,300	95,300
2.4 Employee Benefits	**75,500**	**75,000**	**301,800**	**358,300**	**365,300**	**372,300**	**379,400**	**386,400**
Employee Benefits	75,500	75,000	301,800	358,300	365,300	372,300	379,400	386,400
4.2 Supplies & Other	**71,300**	**71,000**	**151,200**	**75,400**	**64,900**	**67,900**	**64,900**	**67,900**
Memberships, Licenses & Subscriptions				3,500	500	3,500	500	3,500
Office Supplies				7,000	7,000	7,000	7,000	7,000
Operating Supplies	63,300	63,100	113,700	10,000	15,000	15,000	15,000	15,000
Repairs & Maintenance-Equipment				13,900	20,900	20,900	20,900	20,900
Training and Internal Meetings	8,000	7,900	37,500	36,000	12,500	12,500	12,500	12,500
Uniforms, Laundry, Cleaning					1,000	1,000	1,000	1,000
Employee Uniform Expense				5,000	8,000	8,000	8,000	8,000
6.0 Capital Outlay	-	-	**25,000**	**25,500**	**105,800**	**30,700**	**31,300**	**9,200**
Capital Outlay less than $5,000			25,000	25,500	105,800	30,700	31,300	9,200
Capital Outlay over $5k(O&M-Capitalized)	-	-	-	-	-	-	-	-
Grand Total	$ 4,951,400	$ 4,953,700	$ 5,900,000	$ 5,799,100	$ 5,912,000	$ 5,833,500	$ 5,861,000	$ 5,872,600

Highlights

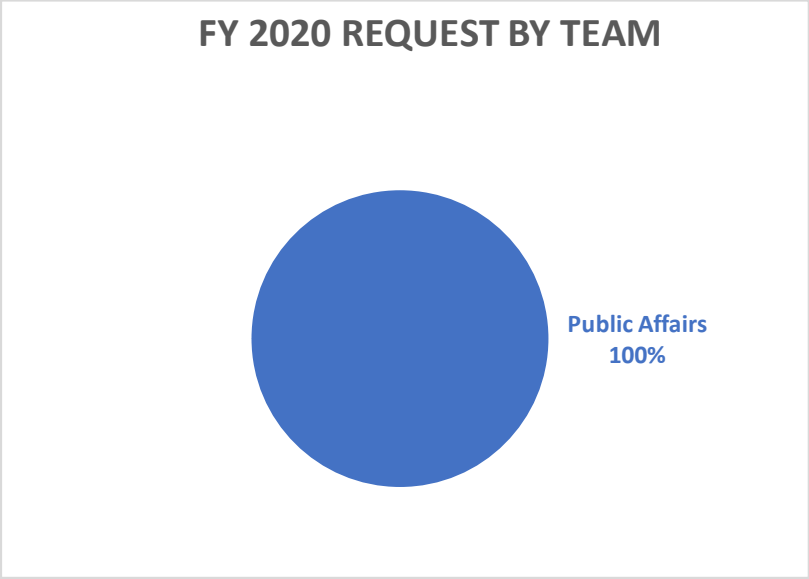
The Public Affairs Area is presently leading GLWA in several strategic initiatives.

- **Grow and Enhance GLWA's Brand Awareness/Recognition -** Development and implementation of a pilot brand awareness campaign to heighten knowledge of GLWA, its mission and the value it brings to its member partners and southeast Michigan.
- **Grow GLWA's Community Outreach Efforts -** Expose the GLWA brand to residents of our customer communities, support at least one community-focused event each year in Wayne, Oakland and Macomb Counties, as well as in an out-county community to which GLWA provides service.
- **Provide Strategic Communication Counsel –** Working in partnership with the Board of Directors, produce one evening community each quarter in one of GLWA's founding communities.

Organization

The Public Affairs Area consists of a single team.

- **Public Affairs** – The Public Affairs Department is responsible for sharing the Authority's mission, vision, values and accomplishments with its stakeholders – both internal and external.

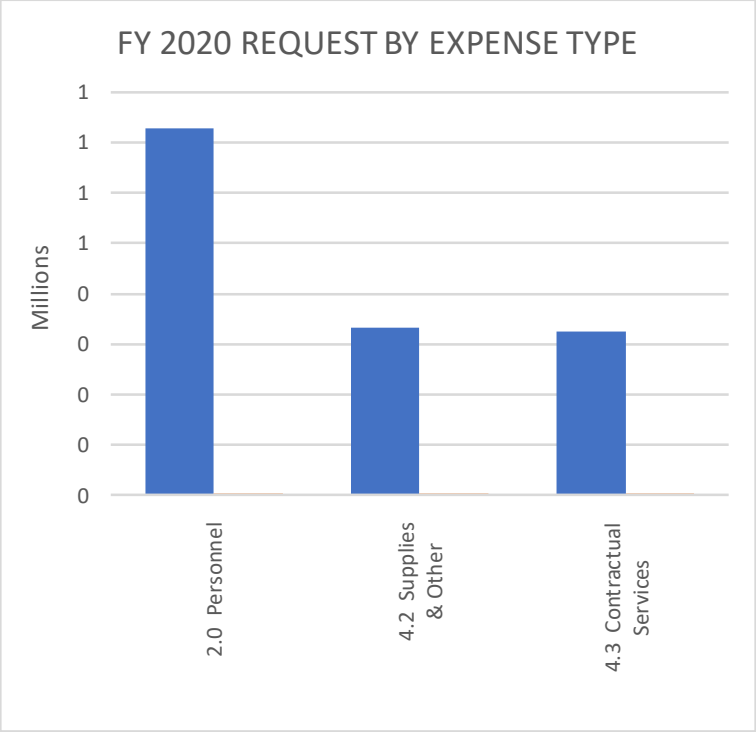


Expense Categories

There are three major categories of Public Affairs expenses in the Operations and Maintenance Budget as listed below.

- Salaries & Wages
- Contractual Services
- Supplies & Other

Salaries & Wages is the highest expense category for Public Affairs. In FY 2020 an additional Office Support Specialist will be added in first quarter to support their key initiatives listed above.



Biennial Budget Request

The biennial budget reflects an increase in FY 2020 as a result of launching the new GLWA Brand Awareness Campaign.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel	$ 535,300	$ 535,100	$ 687,800	$ 179,865	$ 728,300	$ 40,500.00	5.9%	$ 753,900
4.2 Supplies & Other	127,100	126,100	225,300	60,096	333,800	108,500	48.2%	336,800
4.3 Contractual Services	312,000	316,300	279,600	35,783	324,000	44,400	15.9%	324,000
6.0 Capital Outlay	54,500	51,200	53,800	65,707	-	(68,800)	-100.0%	-
6.0 Capital Outlay	54,500	51,200	53,800	65,707	-	(68,800)	-100.0%	-
Grand Total	$ 1,028,900	$ 1,028,700	$ 1,246,500	$ 341,451	$ 1,386,100	$ 124,600	9.9%	$ 1,414,700

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2019 Activity thru 10.31.2018	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
Public Affairs	$ 1,028,900	$ 1,028,700	$ 1,246,500	$ 341,451	$ 1,386,100	$ 124,600	9.9%	$ 1,414,700
Grand Total	**$ 1,028,900**	**$ 1,028,700**	**$ 1,246,500**	**$ 341,451**	**$ 1,386,100**	**$ 124,600**	**9.9%**	**$ 1,414,700**

Personnel Budget

Public Affairs personnel consists of 8 positions for FY 2020. In first quarter of FY 2020 an office support specialist will be added to support key initiatives.

The following tables provide three alternate views of the staffing plans and budget.

Staffing Plan - The table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Staffing Plan	FY 2019 Staffing Plan	FY 2020 Staffing Plan	FY 2021 Staffing Plan	FY 2022 Staffing Plan	FY 2023 Staffing Plan	FY 2024 Staffing Plan
Public Affairs	**7.00**	**7.00**	**8.00**	**8.00**	**8.00**	**8.00**	**8.00**
Public Affairs	7.00	7.00	8.00	8.00	8.00	8.00	8.00

Full-time Equivalents - The table below presents "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. For this budget area, the Staffing Plan and the FTEs are consistent.

Full-time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 FTE's	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Public Affairs	**7.00**	**7.00**	**7.50**	**8.00**	**8.00**	**8.00**	**8.00**
Public Affairs	7.00	7.00	7.50	8.00	8.00	8.00	8.00

Personnel Budget - The table below presents the Public Affairs personnel budget which consists of the following expense categories: Salaries & Wages, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment and Contractual Transition Services.

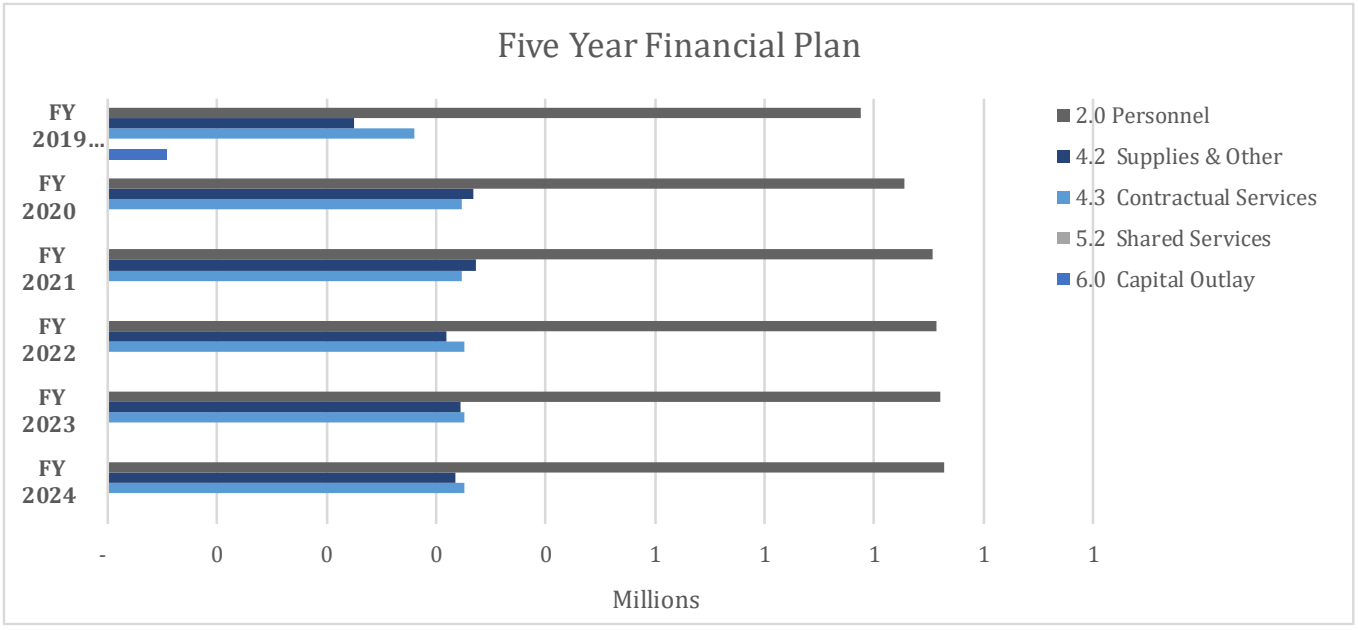
Personnel Budget

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Public Affairs	$ 687,800	$ 728,300	$ 753,900	$ 757,200	$ 760,500	$ 763,900
Grand Total	**$ 687,800**	**$ 728,300**	**$ 753,900**	**$ 757,200**	**$ 760,500**	**$ 763,900**

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 687,800	$ 728,300	$ 40,500	5.9%	$ 753,900	$ 757,200	$ 760,500	$ 763,900
4.2 Supplies & Other	225,300	333,800	108,500	48.2%	336,800	310,000	322,900	317,700
4.3 Contractual Services	279,600	324,000	44,400	15.9%	324,000	325,700	325,700	325,700
5.2 Shared Services	-	-	-	n/a	-	0	0	0
6.0 Capital Outlay	53,800	-	(68,800)	-100.0%	-	-	-	-
Grand Total	$ 1,246,500	$ 1,386,100	$ 124,600	9.9%	$ 1,414,700	$ 1,392,900	$ 1,409,100	$ 1,407,300

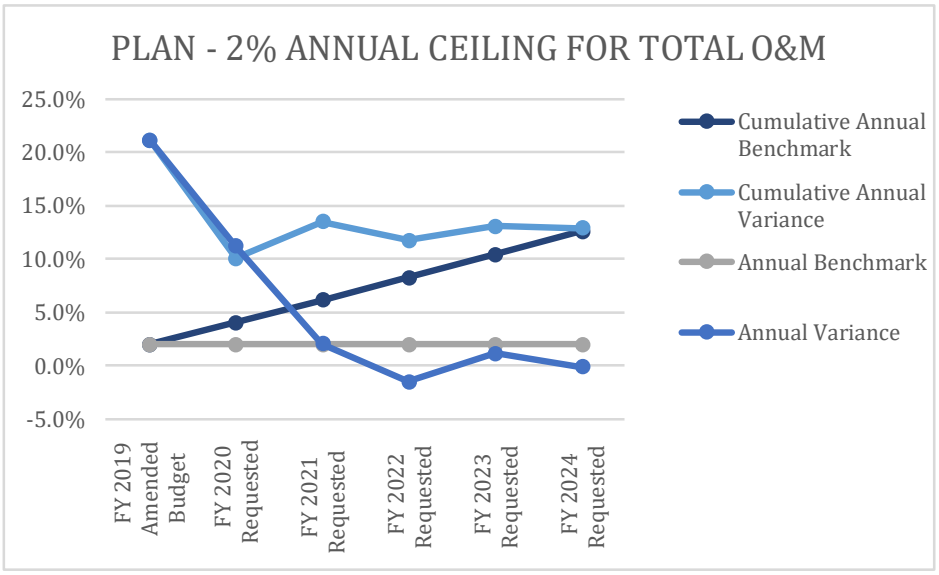


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Public Affairs	**$ 1,246,500**	**$ 1,386,100**	**$ 124,600**	**9.9%**	**$ 1,414,700**	**$ 1,392,900**	**$ 1,409,100**	**$ 1,407,300**
Public Affairs	1,246,500	1,386,100	124,600	9.9%	1,414,700	1,392,900	1,409,100	1,407,300
Grand Total	**$ 1,246,500**	**$ 1,386,100**	**$ 124,600**	**9.9%**	**$ 1,414,700**	**$ 1,392,900**	**$ 1,409,100**	**$ 1,407,300**

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Public Affairs Group's financial plan reflects a Five Year Overall increase of 9.8% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

"open for 1.2019 revised draft"

Capital Outlay

Public Affairs capital outlay is funded by the I&E budget.

Capital Outlet by Asset Category

Asset Categories	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Computers & IT	$ 75,000	$ 5,000	$ 18,000	$ 10,000	$ 22,000
Grand Total	**$ 75,000**	**$ 5,000**	**$ 18,000**	**$ 10,000**	**$ 22,000**

Capital Outlay by Funding Source

Asset Funding Source	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
I&E	$ 75,000	$ 5,000	$ 18,000	$ 10,000	$ 22,000
O&M					
Grand Total	**$ 75,000**	**$ 5,000**	**$ 18,000**	**$ 10,000**	**$ 22,000**

Capital Outlay by Team

Team	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
Public Affairs	$ 75,000	$ 5,000	$ 18,000	$ 10,000	$ 22,000
Grand Total	**$ 75,000**	**$ 5,000**	**$ 18,000**	**$ 10,000**	**$ 22,000**

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget begins on the next page. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Cost Center & Description	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Requested	FY 2021 Requested	FY 2022 Requested	FY 2023 Requested	FY 2024 Requested
883351 - Info Technology Business Applications	**$ 5,043,100**	**$ 1,801,400**	**$ 6,001,100**	**$ 5,913,900**	**$ 6,408,200**	**$ 6,417,700**	**$ 5,531,100**	**$ 5,438,400**
2.1 Salaries & Wages	**768,400**	**380,300**	**959,400**	**1,089,000**	**1,089,000**	**1,089,000**	**1,089,000**	**1,089,000**
Salaries & Wages	768,400	380,300	959,400	1,089,000	1,089,000	1,089,000	1,089,000	1,089,000
2.4 Employee Benefits	**181,200**	**110,800**	**268,100**	**308,600**	**314,700**	**320,700**	**326,800**	**332,800**
Employee Benefits	181,200	110,800	268,100	308,600	314,700	320,700	326,800	332,800
2.5 Transition Services	**37,800**	-	**138,600**	-	-	-	-	-
Contractual Transition Services	37,800		138,600					
4.2 Supplies & Other	**950,000**	**132,900**	**1,407,300**	**1,245,600**	**1,248,500**	**1,250,800**	**3,754,100**	**3,756,600**
Memberships, Licenses & Subscriptions			500	500	500	500	500	600
Repairs & Maintenance-Software	739,900	119,200	1,368,800	1,206,300	1,208,500	1,210,000	3,712,500	3,714,000
Training and Internal Meetings	205,100		20,000	20,400	20,800	21,200	21,600	22,100
Travel	5,000	13,700	18,000	18,400	18,700	19,100	19,500	19,900
4.3 Contractual Services	**4,541,700**	**1,732,600**	**3,166,600**	**4,004,200**	**3,706,000**	**3,707,200**	**311,200**	**210,000**
Contract Services-Information Technology	3,481,700	1,193,700	2,972,600	3,810,200	3,508,100	3,505,300	105,300	
Contractual Operating Services	1,060,000	538,900	194,000	194,000	197,900	201,900	205,900	210,000
5.2 Shared Services	**(2,402,500)**	**(704,000)**	**(265,600)**	**(783,500)**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(226,300)	(107,300)	(180,700)	(75,400)				
Shared Services Reimbursement	(2,176,200)	(553,800)	(84,900)	(708,100)				
Shared Services: Employee Benefit Reimb		(42,900)						
6.0 Capital Outlay	**966,500**	**148,800**	**326,700**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**
Capital Outlay less than $5,000	63,000							
Capital Outlay over $5k(O&M-NonCapitlzd)	903,500	148,800	326,700	50,000	50,000	50,000	50,000	50,000
883361 - Info Technology Security & Risk	**$ 326,000**	**$ (546,300)**	**$ 491,700**	**$ 403,200**	**$ 436,500**	**$ 438,600**	**$ 440,700**	**$ 442,900**
2.1 Salaries & Wages	**225,700**	**110,100**	**206,300**	**290,000**	**290,000**	**290,000**	**290,000**	**290,000**
Salaries & Wages	225,700	110,100	206,300	290,000	290,000	290,000	290,000	290,000
2.4 Employee Benefits	**65,500**	**25,100**	**54,600**	**78,300**	**79,900**	**81,400**	**82,900**	**84,500**
Employee Benefits	65,500	25,100	54,600	78,300	79,900	81,400	82,900	84,500
4.2 Supplies & Other	**63,500**	**(65,000)**	**3,500**	**3,600**	**3,600**	**3,700**	**3,800**	**3,900**
Memberships, Licenses & Subscriptions	3,500		3,500	3,600	3,600	3,700	3,800	3,900
Mileage and Parking	-	100	-	-	-	-	-	-
Repairs & Maintenance-Software	60,000	(65,500)						
Travel	-	400	-	-	-	-	-	-
5.2 Shared Services	**(28,700)**	**(629,900)**	**(82,700)**	**(31,200)**	**-**	**-**	**-**	**-**
Shared Services : Salaries & Wages Reimb	(20,700)	(27,100)	(82,700)	(31,200)		-	-	-
Shared Services Reimbursement		(592,000)				-	-	-
Shared Services: Employee Benefit Reimb	(8,000)	(10,800)					-	-
6.0 Capital Outlay	**-**	**13,400**	**310,000**	**62,500**	**63,000**	**63,500**	**64,000**	**64,500**
Capital Outlay less than $5,000	-	4,300	-	-	-	-	-	-
Capital Outlay over $5k(O&M-NonCapitlzd)	-	9,100	310,000	62,500	63,000	63,500	64,000	64,500
Grand Total	**$ 24,473,600**	**$ 11,342,508**	**$ 30,507,800**	**$ 36,254,300**	**$ 38,630,400**	**$ 39,640,600**	**$ 38,689,600**	**$ 39,587,400**

Highlights

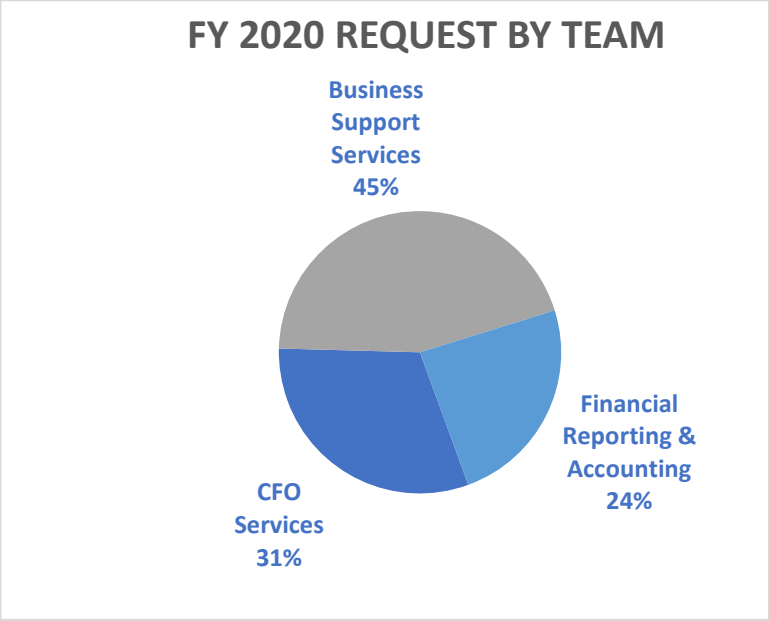
The Financial Services Area is engaged in several strategic initiatives – both as leader and key participant in entity-wide initiatives.

- Financial operations: rollout of automation to reduce the inefficiencies of transactional and processing times to expand analytical capacity.
- Business support: expand the Small Business Initiative, explore utility cooperative procurement sponsorship, and vendor quality management.
- Cross-functional collaboration in key initiatives: strategic asset management, enterprise asset management, capital program management, and Ceridian reimplementation.

Organization

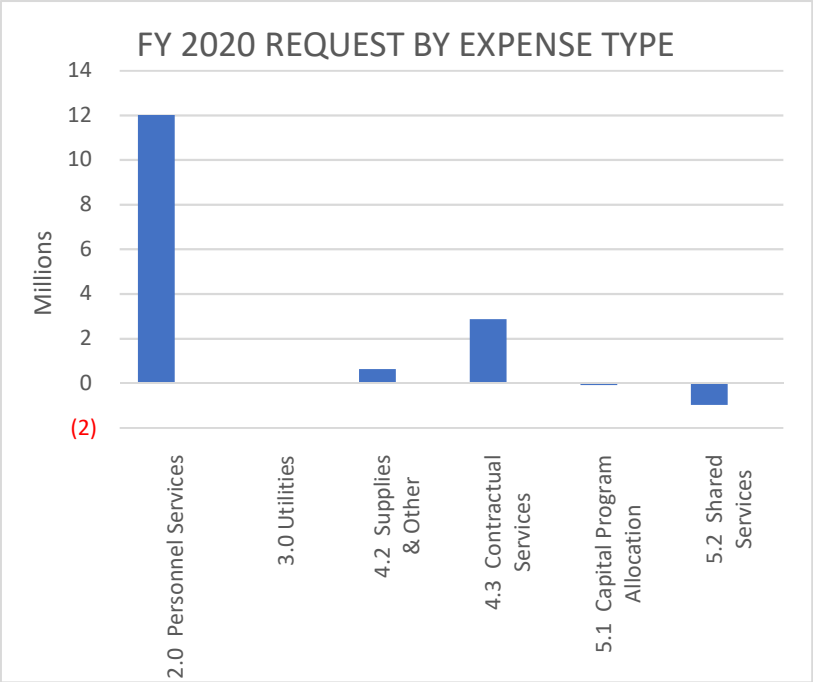
The Financial Services Area consists of three groups.

- **CFO Services** – Plans and directs all strategic financial planning, compliance, internal audit, and intergovernmental activities.
- **Business Support Services** – Responsible for procurement, inventory management, and transformational business support.
- **Financial Reporting & Accounting** – Construction, general ledger, accounts payable, payroll, asset management, and related activities.



Expense Categories

The primary expense category in the Financial Services area is Personnel Services. The second largest category is contractual services for transitional staffing, project management support, and other special projects, studies, and audits.



Biennial Budget Request

The biennial reflects an increase in FY 2020 as a result of securing personnel services in accordance with the staffing model to deliver on the strategic initiatives defined above.

Biennial Budget Request by Expense Category

Expense Categories	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
2.0 Personnel Costs	$ 10,502,800	$ 10,262,800	$ 10,728,800	$ 12,016,200	$ 1,287,400	$ 0	$ 12,148,400
3.0 Utilities	20,000	21,100	13,000	16,200	3,200	24.6%	16,500
4.2 Supplies & Other	599,400	580,000	685,000	629,600	(55,400)	-8.1%	633,300
4.3 Contractual Services	2,329,400	2,345,200	3,454,700	2,864,900	(589,800)	-17.1%	2,909,300
5.1 Capital Program Allocation	(6,300)	(5,700)	-	(78,500)	(78,500)	0.0%	(78,900)
5.2 Shared Services	(36,300)	(38,600)	(945,900)	(964,900)	(19,000)	2.0%	(984,200)
6.0 Capital Outlay	(78,100)	(78,100)	-	-	-	0.0%	-
Grand Total	$ 13,330,900	$ 13,086,700	$ 13,935,600	$ 14,483,500	$ 547,900	3.9%	$ 14,644,400

Biennial Budget Request by Team

Team	FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested
CFO Services	$ 4,005,400	$ 4,004,400	$ 4,485,100	$ 4,488,400	$ 3,300	0.1%	$ 4,513,900
Business Support Services	6,313,900	6,070,900	6,161,400	6,483,300	321,900	5.2%	6,606,500
Financial Reporting & Accounting	3,011,600	3,011,400	3,289,100	3,511,800	222,700	6.8%	3,524,000
Grand Total	$ 13,330,900	$ 13,086,700	$ 13,935,600	$ 14,483,500	$ 547,900	3.9%	$ 14,644,400

Personnel Budget

The following tables provide three alternate views of the staffing plans and budget

Staffing Plan – the table below presents the number of positions in the plan. Each position has a value of one. The position count does not distinguish between a position that is filled 100% (2,080 hours per year), filled for a number of hours less than 2,080 per year, or one that is vacant.

Staffing Plan – Number of Positions

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	**FY 2018 Staffing Plan**	**FY 2019 Staffing Plan**	**FY 2020 Staffing Plan**	**FY 2021 Staffing Plan**	**FY 2022 Staffing Plan**	**FY 2023 Staffing Plan**	**FY 2024 Staffing Plan**
Financial Services Area	**110.00**	**118.00**	**123.00**	**123.00**	**123.00**	**123.00**	**123.00**
CFO Services	**20.00**	**26.00**	**29.00**	**29.00**	**29.00**	**29.00**	**29.00**
Chief Financial Officer	2.00	3.00	5.00	5.00	5.00	5.00	5.00
Data Analytics & Internal Audit	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Financial Planning & Analysis	6.00	8.00	9.00	9.00	9.00	9.00	9.00
Public Finance	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Reporting and Compliance	0.00	4.00	4.00	4.00	4.00	4.00	4.00
Treasury	4.00	3.00	3.00	3.00	3.00	3.00	3.00
Business Support Services	**63.00**	**65.00**	**67.00**	**67.00**	**67.00**	**67.00**	**67.00**
Logistics and Materials	22.00	23.00	24.00	24.00	24.00	24.00	24.00
Owners' Representative	5.00	5.00	6.00	6.00	6.00	6.00	6.00
Procurement Director	1.00	1.00	2.00	2.00	2.00	2.00	2.00
Procurement (Enterprise Services)	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Procurement (Wastewater)	12.00	12.00	11.00	11.00	11.00	11.00	11.00
Procurement (Water & Field Services)	9.00	9.00	8.00	8.00	8.00	8.00	8.00
Transformation	6.00	7.00	8.00	8.00	8.00	8.00	8.00
Financial Reporting & Accounting	**27.00**	**27.00**	**27.00**	**27.00**	**27.00**	**27.00**	**27.00**
Financial Reporting & Accounting	27.00	27.00	27.00	27.00	27.00	27.00	27.00

Full Time Equivalents – the table below presents, "full-time equivalent" (FTE) staffing. FTE is based on the number of hours that the position is filled, or budgeted for, in a given year based upon a standard of 2,080 hours per year. In addition, the Financial Services Area employees part-time employees.

Full Time Equivalents

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Approved FTEs	FY 2019 Approved FTE's	FY 2020 FTE's	FY 2021 FTE's	FY 2022 FTE's	FY 2023 FTE's	FY 2024 FTE's
Financial Services Area	**109.50**	**114.25**	**119.25**	**121.00**	**121.00**	**121.00**	**121.00**
CFO Services	**20.00**	**26.00**	**29.00**	**29.00**	**29.00**	**29.00**	**29.00**
Chief Financial Officer	2.00	3.00	5.00	5.00	5.00	5.00	5.00
Data Analytics & Internal Audit	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Financial Planning & Analysis	6.00	8.00	9.00	9.00	9.00	9.00	9.00
Public Finance	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Reporting and Compliance	0.00	4.00	4.00	4.00	4.00	4.00	4.00
Treasury	4.00	3.00	3.00	3.00	3.00	3.00	3.00
Business Support Services	**63.00**	**63.25**	**64.25**	**66.00**	**66.00**	**66.00**	**66.00**
Logistics and Materials	22.00	23.00	23.25	24.00	24.00	24.00	24.00
Owners' Representative	5.00	4.25	6.00	6.00	6.00	6.00	6.00
Procurement Director	1.00	1.00	1.50	1.50	1.50	1.50	1.50
Procurement (Enterprise Services)	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Procurement (Wastewater)	12.00	11.50	10.00	10.50	10.50	10.50	10.50
Procurement (Water & Field Services)	9.00	8.75	7.50	8.00	8.00	8.00	8.00
Transformation	6.00	6.75	8.00	8.00	8.00	8.00	8.00
Financial Reporting & Accounting	**26.50**	**25.00**	**26.00**	**26.00**	**26.00**	**26.00**	**26.00**
Financial Reporting & Accounting	26.50	25.00	26.00	26.00	26.00	26.00	26.00

Personnel Budget – The table below presents the Financial Services Area personnel budget which consists of the following expense categories: Salaries & Wager, Salaries & Wages – Workforce Development, Employee Benefits, Personnel Transition Adjustment, and Contractual Transition Services.

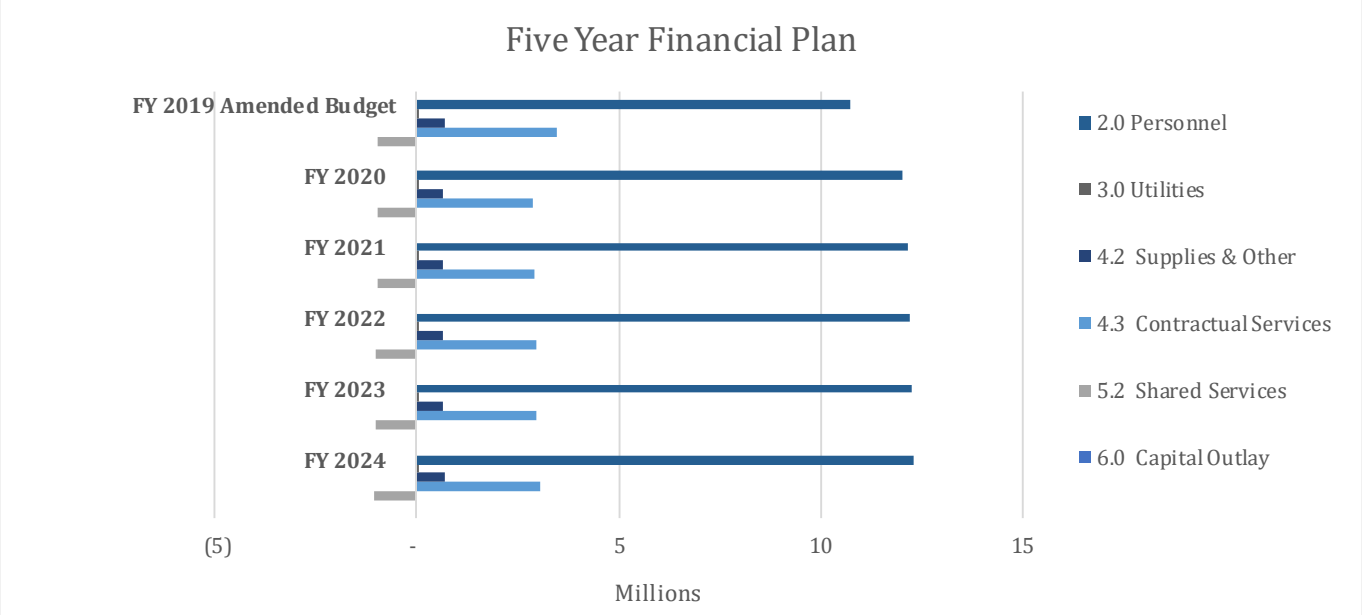
Personnel Budget

	Prior Year	Current Year	Biennial Budget		Forecast		
Team	FY 2018 Amended Budget	2019 Amended Budget	2020 Department Requested Budget	Sum of FY 2021 Department Requested	Sum of FY 2022 Department Requested	Sum of FY 2023 Department Requested	Sum of FY 2024 Department Requested
Financial Services Area	**$ 10,502,800**	**$ 10,728,800**	**$ 12,016,200**	**$ 12,148,400**	**$ 12,193,100**	**$ 12,237,400**	**$ 12,281,800**
CFO Services	**2,618,100**	**2,952,900**	**3,501,300**	**3,513,200**	**3,525,300**	**3,537,300**	**3,549,300**
Chief Financial Officer	365,700	442,900	792,700	794,400	796,100	797,900	799,600
Data Analytics & Internal Audit	366,000	455,100	456,100	457,100	458,100	459,100	460,100
Financial Planning & Analysis	773,000	877,000	1,022,900	1,027,300	1,031,600	1,035,900	1,040,300
Public Finance	841,300	807,900	546,800	548,600	550,500	552,400	554,300
Treasury	272,100	370,000	302,200	303,500	304,900	306,200	307,500
Reporting and Compliance	0	0	380,600	382,300	384,100	385,800	387,500
Business Support Services	**5,394,500**	**5,501,900**	**6,030,100**	**6,140,200**	**6,162,600**	**6,184,600**	**6,206,800**
Logistics and Materials	1,090,200	1,363,300	1,510,500	1,553,300	1,561,300	1,569,200	1,577,100
Owners' Representative	97,000	245,200	680,900	683,800	686,700	689,600	692,500
Transformation	1,183,000	1,189,400	1,391,700	1,391,700	1,391,700	1,391,700	1,391,700
Procurement Director	1,257,000	321,500	221,100	222,000	222,900	223,700	224,600
Procurement (Water & Field Services)	963,300	1,134,800	723,700	746,900	750,200	753,500	756,800
Procurement (Wastewater)	702,800	864,700	840,700	877,900	882,000	886,000	890,100
Procurement (Enterprise Services)	101,200	383,000	661,500	664,600	667,800	670,900	674,000

Five Year Financial Plan

Five-Year Financial Plan by Expense Category

Expense Categories	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
2.0 Personnel	$ 10,728,800	$ 12,016,200	$ 1,287,400	12.0%	$12,148,400	12,193,100	12,237,400	12,281,800
3.0 Utilities	13,000	16,200	3,200	24.6%	16,500	16,700	17,000	18,400
4.2 Supplies & Other	685,000	629,600	(55,400)	-8.1%	633,300	642,900	658,300	683,100
4.3 Contractual Services	3,454,700	2,864,900	(589,800)	-17.1%	2,909,300	2,942,000	2,951,600	3,062,700
5.1 Capital Program Allocation	-	(78,500)	(78,500)	0.0%	(78,900)	(79,200)	(79,500)	(79,800)
5.2 Shared Services	(945,900)	(964,900)	(19,000)	2.0%	(984,200)	(1,003,900)	(1,024,000)	(1,044,500)
Grand Total	$ 13,935,600	$ 14,483,500	$ 547,900	3.9%	$14,644,400	14,711,600	14,760,800	14,921,700

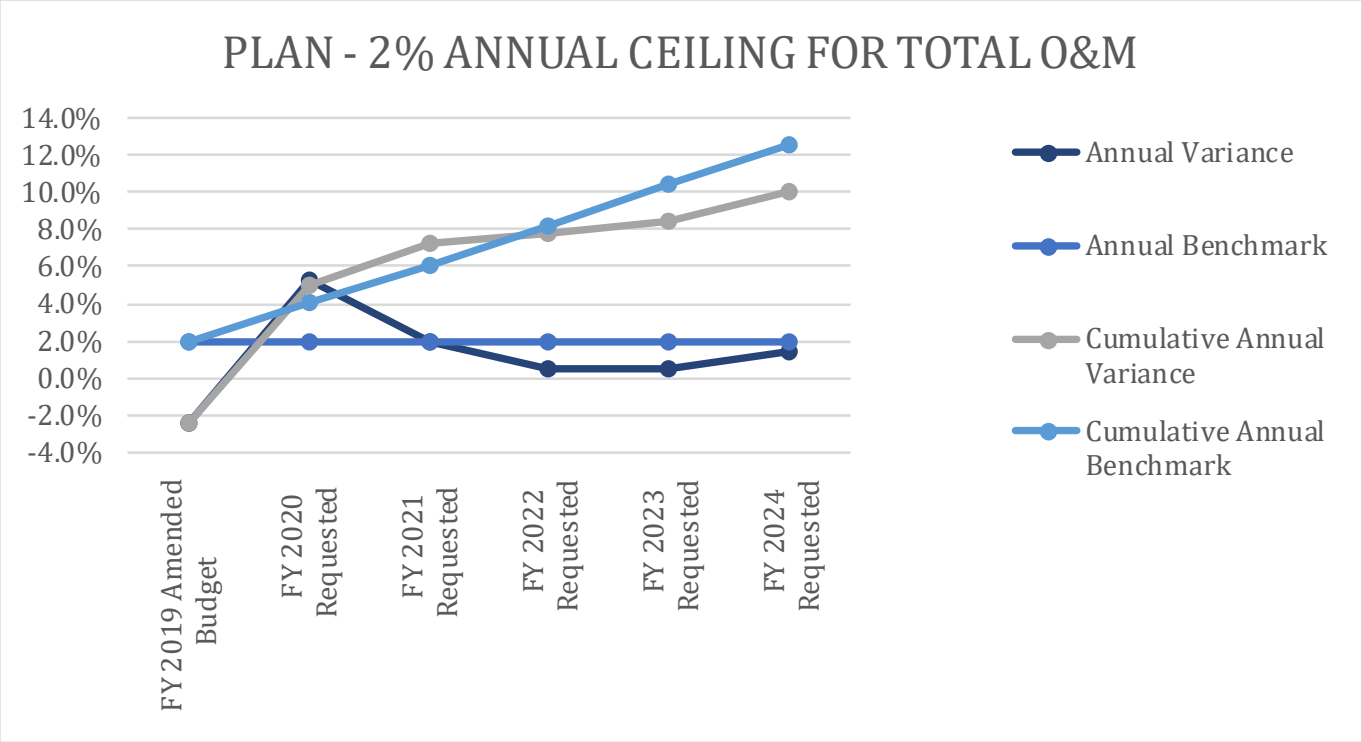


Five-Year Financial Plan by Team

Team	FY 2019 Amended Budget	FY 2020 Department Requested	FY 2020 Dollar Variance	FY 2020 Percent Variance	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
CFO Services	$ 4,485,100	$ 4,488,400	$ 3,300	$ 0	$ 4,513,900	$ 4,533,400	$ 4,534,600	$ 4,584,300
Business Support Services	6,161,400	6,483,300	321,900	0	6,606,500	6,642,000	6,677,700	6,776,500
Financial Reporting & Accounting	3,289,100	3,511,800	222,700	0	3,524,000	3,536,200	3,548,500	3,560,900
Grand Total	$ 13,935,600	$ 14,483,500	$ 547,900	3.9%	$ 14,644,400	$ 14,711,600	$ 14,760,800	$ 14,921,700

Alignment with Entity-wide Annual O&M Ceiling Goal of 2%

The Financial Services Group's financial plan reflects a Five Year Overall increase of 10.0% while the entity-wide goal is a cumulative 12.6% for planning purposes (based upon an annual 2% adjustment). It should be noted that the provision for wage and benefit adjustments included in the annual "unallocated O&M reserve".



Effective Utility Management Measures

Open for 1.2019 revised draft

Capital Outlay:

No Capital outlay is projected for fiscal years 2020 thru 2024 for the Financial Services Area.

Line Item Budget and Financial Plan

The five-year plan with a line item expense budget is shown below. The expenses are listed in numerical order by cost center. Because many of GLWA's initiatives expand multiple years, this planning document provides the information to smooth out expenses over time and/or plan for annual fluctuations.

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
884001 - Chief Financial Officer	**$ 563,100**	**$ 563,000**	**$ 686,900**	**$ 840,400**	**$ 843,000**	**$ 845,700**	**$ 848,500**	**$ 851,100**
2.1 Salaries & Wages	**316,100**	**315,100**	**353,000**	**457,200**	**457,200**	**457,200**	**457,200**	**457,200**
2.4 Employee Benefits	**49,600**	**49,800**	**89,900**	**90,000**	**91,700**	**93,400**	**95,200**	**96,900**
4.2 Supplies & Other	**41,700**	**40,800**	**44,000**	**47,700**	**48,600**	**49,600**	**50,600**	**51,500**
Memberships, Licenses & Subsc	6,000	6,400	9,000	10,000	10,200	10,400	10,600	10,800
Mileage and Parking	-	-	2,000	2,000	2,100	2,100	2,200	2,200
Miscellaneous Expense	1,500	1,600	3,000	3,100	3,100	3,200	3,200	3,300
Postage	200	100	200	200	200	200	200	200
Travel	6,000	6,000	11,000	11,200	11,400	11,700	11,900	12,100
4.3 Contractual Services	**155,700**	**157,300**	**200,000**	-	-	-	-	-
884111 - Financial Reporting & Accounting	**$ 3,011,600**	**$ 3,011,400**	**$ 3,289,100**	**$ 3,511,800**	**$ 3,524,000**	**$ 3,536,200**	**$ 3,548,500**	**$ 3,560,900**
2.1 Salaries & Wages	**1,326,500**	**1,326,800**	**1,436,200**	**1,746,900**	**1,746,900**	**1,746,900**	**1,746,900**	**1,746,900**
2.3 Overtime	**2,300**	**2,400**	**5,200**	**2,000**	**2,000**	**2,000**	**2,000**	**2,000**
2.4 Employee Benefits	**424,000**	**423,700**	**444,400**	**532,000**	**542,200**	**552,400**	**562,700**	**572,900**
4.2 Supplies & Other	**69,000**	**63,000**	**84,600**	**96,400**	**98,300**	**100,200**	**102,100**	**104,200**
Memberships, Licenses & Subsc	2,900	2,600	6,900	7,000	7,100	7,300	7,400	7,600
Mileage and Parking	2,600	1,100	2,600	2,700	2,800	2,800	2,900	2,900
Office Supplies	27,000	25,800	27,000	30,000	30,600	31,200	31,800	32,500
Operating Supplies	-	(200)	-	-	-	-	-	-
Postage	20,600	18,700	26,600	30,000	30,600	31,200	31,800	32,500
Training and Internal Meetings	9,000	8,100	9,000	14,000	14,300	14,600	14,900	15,200
Travel	6,900	6,900	10,000	10,200	10,400	10,600	10,800	11,000
Tuition Refund	-	-	2,500	2,500	2,500	2,500	2,500	2,500
4.3 Contractual Services	**530,500**	**537,500**	**930,500**	**930,600**	**930,700**	**930,800**	**930,900**	**931,000**
Auditing	55,000	57,900	450,000	450,000	450,000	450,000	450,000	450,000
Contractual Operating Services	4,500	9,000	4,500	4,600	4,700	4,800	4,900	5,000
Contractual Professional Servic	471,000	470,600	476,000	476,000	476,000	476,000	476,000	476,000
6.0 Capital Outlay	**(78,100)**	**(78,100)**	-	-	-	-	-	-
2.2 Workforce Development	-	-	**12,800**	**12,800**	**12,800**	**12,800**	**12,800**	**12,800**
Salaries & Wages - Workforce D	-	-	12,800	12,800	12,800	12,800	12,800	12,800
2.5 Transition Services	**737,400**	**736,100**	**466,300**	**191,100**	**191,100**	**191,100**	**191,100**	**191,100**
Contractual Transition Services	737,400	736,100	466,300	191,100	191,100	191,100	191,100	191,100
2.6 Personnel Transition Adjustr	-	-	**(90,900)**	-	-	-	-	-
Personnel Transition Adjustmer	-	-	(90,900)	-	-	-	-	-
884113 - Financial Planning & Analysis	**$ 1,095,200**	**$ 1,095,100**	**$ 1,189,000**	**$ 1,239,200**	**$ 1,243,900**	**$ 1,248,500**	**$ 1,253,200**	**$ 1,258,000**
2.1 Salaries & Wages	**567,000**	**564,600**	**587,000**	**797,000**	**797,000**	**797,000**	**797,000**	**797,000**
2.4 Employee Benefits	**129,200**	**130,200**	**166,300**	**225,900**	**230,300**	**234,600**	**238,900**	**243,300**
4.2 Supplies & Other	**11,000**	**9,200**	**12,000**	**16,300**	**16,600**	**16,900**	**17,300**	**17,700**
Memberships, Licenses & Subsc	1,900	1,700	1,900	2,300	2,300	2,400	2,400	2,500
Mileage and Parking	200	100	200	300	300	300	300	400
Office Supplies	2,600	1,400	1,900	2,700	2,800	2,800	2,900	2,900
Training and Internal Meetings	3,800	3,900	5,000	6,000	6,100	6,200	6,400	6,500
Travel	2,500	2,100	3,000	5,000	5,100	5,200	5,300	5,400
4.3 Contractual Services	**311,200**	**312,500**	**300,000**	**200,000**	**200,000**	**200,000**	**200,000**	**200,000**
Contractual Professional Servic	311,200	312,500	300,000	200,000	200,000	200,000	200,000	200,000
2.5 Transition Services	**76,800**	**78,600**	**176,700**	-	-	-	-	-
Contractual Transition Services	76,800	78,600	176,700	-	-	-	-	-
2.6 Personnel Transition Adjustr	-	-	**(53,000)**	-	-	-	-	-
Personnel Transition Adjustmer	-	-	(53,000)	-	-	-	-	-
884131 - Treasury	**$ 688,000**	**$ 687,000**	**$ 889,900**	**$ 591,200**	**$ 598,200**	**$ 605,500**	**$ 612,800**	**$ 620,100**
2.1 Salaries & Wages	**199,600**	**199,600**	**260,600**	**233,000**	**233,000**	**233,000**	**233,000**	**233,000**
2.4 Employee Benefits	**55,500**	**56,100**	**72,900**	**69,200**	**70,500**	**71,900**	**73,200**	**74,500**
4.2 Supplies & Other	**12,900**	**11,700**	**14,700**	**18,500**	**18,800**	**19,200**	**19,600**	**19,900**
Capital Outlay less than $5,000	1,500	1,500	-	-	-	-	-	-
Memberships, Licenses & Subsc	1,700	1,300	1,700	2,500	2,500	2,600	2,700	2,700
Mileage and Parking	500	-	500	500	500	500	500	500
Office Supplies	3,800	3,900	5,000	5,000	5,100	5,200	5,300	5,400
Postage	500	-	500	500	500	500	500	500
Training and Internal Meetings	2,300	2,300	3,500	5,000	5,100	5,200	5,300	5,400
Travel	2,600	2,700	3,500	5,000	5,100	5,200	5,300	5,400
4.3 Contractual Services	**403,000**	**401,400**	**1,413,000**	**1,196,500**	**1,220,400**	**1,244,800**	**1,269,700**	**1,295,100**
Contractual Operating Services	403,000	401,100	1,413,000	1,196,500	1,220,400	1,244,800	1,269,700	1,295,100
Contractual Professional Servic	-	300	-	-	-	-	-	-
2.5 Transition Services	**17,000**	**18,200**	**52,200**	-	-	-	-	-
Contractual Transition Services	17,000	18,200	52,200	-	-	-	-	-
2.6 Personnel Transition Adjustr	-	-	**(15,700)**	-	-	-	-	-
Personnel Transition Adjustmer	-	-	(15,700)	-	-	-	-	-
5.2 Shared Services	-	-	**(907,800)**	**(926,000)**	**(944,500)**	**(963,400)**	**(982,700)**	**(1,002,400)**
Shared Services Reimbursemen	-	-	(907,800)	(926,000)	(944,500)	(963,400)	(982,700)	(1,002,400)

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
884135 - CFO Services	$ -	$ -	$ -	$ 395,200	$ 397,000	$ 399,300	$ 401,200	$ 403,400
2.1 Salaries & Wages	-	-	-	285,900	285,900	285,900	285,900	285,900
2.3 Overtime	-	-	-	6,000	6,000	6,000	6,000	6,000
2.4 Employee Benefits	-	-	-	88,700	90,400	92,200	93,900	95,600
4.2 Supplies & Other	-	-	-	14,600	14,700	15,200	15,400	15,900
Memberships, Licenses & Subsc	-	-	-	2,000	2,000	2,100	2,100	2,200
Mileage and Parking	-	-	-	400	400	400	400	400
Office Supplies	-	-	-	6,000	6,100	6,200	6,400	6,500
Postage	-	-	-	2,200	2,200	2,300	2,300	2,400
Training and Internal Meetings	-	-	-	2,000	2,000	2,100	2,100	2,200
Travel	-	-	-	2,000	2,000	2,100	2,100	2,200
884141 - Public Finance	$ 1,255,800	$ 1,255,900	$ 1,178,100	$ 878,400	$ 884,900	$ 884,800	$ 866,500	$ 896,400
2.1 Salaries & Wages	453,600	453,200	540,500	340,100	340,100	340,100	340,100	340,100
2.3 Overtime	4,900	4,900	6,000	-	-	-	-	-
2.4 Employee Benefits	122,100	122,700	158,900	97,800	99,600	101,500	103,400	105,300
4.2 Supplies & Other	18,000	15,200	24,300	11,800	15,400	12,300	16,000	12,800
Memberships, Licenses & Subsc	600	700	600	700	700	700	700	700
Mileage and Parking	2,100	700	2,500	800	800	800	800	800
Office Supplies	10,000	9,800	12,500	7,000	7,100	7,300	7,400	7,600
Postage	600	500	3,100	1,000	1,000	1,000	1,100	1,100
Training and Internal Meetings	1,200	800	3,600	1,300	3,700	1,300	3,700	1,300
Travel	2,000	1,200	2,000	1,000	2,100	1,200	2,300	1,300
Tuition Refund	1,500	1,500	-	-	-	-	-	-
4.3 Contractual Services	396,500	401,800	384,000	358,700	360,600	362,500	339,400	371,400
Contractual Operating Services	49,000	55,600	84,000	93,700	95,600	97,500	99,400	101,400
Contractual Professional Servic	347,500	346,200	300,000	240,000	240,000	240,000	240,000	240,000
Legal	-	-	-	25,000	25,000	25,000	-	30,000
6.0 Capital Outlay	-	-	-	-	-	-	-	-
2.5 Transition Services	260,700	260,400	146,500	108,900	108,900	108,900	108,900	108,900
Contractual Transition Services	260,700	260,400	146,500	108,900	108,900	108,900	108,900	108,900
2.6 Personnel Transition Adjustr	-	-	(44,000)	-	-	-	-	-
Personnel Transition Adjustmer	-	-	(44,000)	-	-	-	-	-
5.2 Shared Services	-	(2,300)	(38,100)	(38,900)	(39,700)	(40,500)	(41,300)	(42,100)
Shared Services : Salaries & Wag	-	(2,300)	-	-	-	-	-	-
Shared Services Reimbursemen	-	-	(38,100)	(38,900)	(39,700)	(40,500)	(41,300)	(42,100)
884151 - Data Analytics & Internal Audit	$ 403,300	$ 403,400	$ 541,200	$ 544,000	$ 546,900	$ 549,600	$ 552,400	$ 555,300
2.1 Salaries & Wages	105,900	105,300	186,400	186,400	186,400	186,400	186,400	186,400
2.4 Employee Benefits	22,100	22,200	50,900	51,900	52,900	53,900	54,900	55,900
4.2 Supplies & Other	4,300	2,700	22,600	6,700	6,800	7,000	7,100	7,200
Memberships, Licenses & Subsc	-	-	1,200	1,200	1,200	1,300	1,300	1,300
Mileage and Parking	-	-	-	100	100	100	100	100
Office Supplies	-	-	16,400	300	300	300	300	300
Training and Internal Meetings	1,500	800	3,000	3,100	3,100	3,200	3,200	3,300
Travel	2,800	1,900	2,000	2,000	2,100	2,100	2,200	2,200
4.3 Contractual Services	33,000	33,700	63,500	81,200	83,000	84,500	86,200	88,000
Contractual Professional Servic	33,000	33,700	63,500	81,200	83,000	84,500	86,200	88,000
6.0 Capital Outlay	-	-	-	-	-	-	-	-
2.5 Transition Services	238,000	239,500	217,800	217,800	217,800	217,800	217,800	217,800
Contractual Transition Services	238,000	239,500	217,800	217,800	217,800	217,800	217,800	217,800

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
884161 - Transformation	$ 1,189,200	$ 946,200	$ 1,207,400	$ 1,414,900	$ 1,415,400	$ 1,415,900	$ 1,416,400	$ 1,416,800
4.2 Supplies & Other	**6,200**	**5,800**	**18,000**	**23,200**	**23,700**	**24,200**	**24,700**	**25,100**
Memberships, Licenses & Subsc	1,000	1,100	2,000	2,000	2,100	2,100	2,200	2,200
Mileage and Parking	-	-	1,000	1,000	1,000	1,100	1,100	1,100
Office Supplies	1,800	1,900	2,000	5,000	5,100	5,200	5,300	5,400
Operating Supplies	200	200	3,000	5,000	5,100	5,200	5,300	5,400
Training and Internal Meetings	2,000	1,900	7,000	7,100	7,300	7,400	7,600	7,700
Travel	1,200	700	3,000	3,100	3,100	3,200	3,200	3,300
2.5 Transition Services	**1,183,000**	**940,400**	**1,470,100**	**1,391,700**	**1,391,700**	**1,391,700**	**1,391,700**	**1,391,700**
Contractual Transition Services	1,183,000	940,400	1,470,100	1,391,700	1,391,700	1,391,700	1,391,700	1,391,700
2.6 Personnel Transition Adjustr	-	-	**(280,700)**	-	-	-	-	-
Personnel Transition Adjustmer	-	-	(280,700)	-	-	-	-	-
884121 - Procurement	$ 1,661,300	$ 1,661,300	$ 663,500	$ 461,500	$ 482,100	$ 490,600	$ 500,600	$ 556,100
2.1 Salaries & Wages	**545,700**	**544,300**	**250,400**	**176,200**	**176,200**	**176,200**	**176,200**	**176,200**
2.3 Overtime	**1,000**	**700**	-	-	-	-	-	-
2.4 Employee Benefits	**284,400**	**283,900**	**71,100**	**44,900**	**45,800**	**46,700**	**47,500**	**48,400**
4.2 Supplies & Other	**184,500**	**185,700**	**137,100**	**142,500**	**145,500**	**148,300**	**151,500**	**154,300**
Advertising	11,400	11,400	-	-	-	-	-	-
Capital Outlay less than $5,000	30,600	30,600	-	-	-	-	-	-
Employee Uniform Expense	(1,100)	(1,100)	-	-	-	-	-	-
Memberships, Licenses & Subsc	36,000	35,800	20,000	20,800	21,200	21,600	22,100	22,500
Mileage and Parking	-	900	-	-	-	-	-	-
Office Supplies	36,000	36,900	40,000	41,600	42,400	43,300	44,200	45,000
Operating Supplies	3,900	3,800	11,100	11,500	11,800	12,000	12,300	12,500
Repairs & Maintenance-Equipm	1,000	1,000	1,000	1,000	1,100	1,100	1,100	1,100
Training and Internal Meetings	52,700	52,400	50,000	52,000	53,100	54,100	55,200	56,300
Travel	14,000	14,000	15,000	15,600	15,900	16,200	16,600	16,900
4.3 Contractual Services	**256,500**	**257,400**	**204,900**	**97,900**	**114,600**	**119,400**	**125,400**	**177,200**
Contractual Operating Services	-	1,000	10,000	10,400	10,500	10,800	11,000	11,300
Contractual Professional Servic	256,500	256,400	194,900	87,500	104,100	108,600	114,400	165,900
2.5 Transition Services	**425,900**	**425,200**	-	-	-	-	-	-
Contractual Transition Services	425,900	425,200	-	-	-	-	-	-
5.1 Capital Program Allocation	**(6,300)**	**(5,700)**	-	-	-	-	-	-
Capital Program: Employee Ben	(1,800)	(1,600)	-	-	-	-	-	-
Capital Program: Salaries & Wag	(4,500)	(4,100)	-	-	-	-	-	-
5.2 Shared Services	**(36,300)**	**(36,300)**	-	-	-	-	-	-
Shared Services : Salaries & Wa	(27,700)	(27,700)	-	-	-	-	-	-
Shared Services: Employee Ben	(8,600)	(8,600)	-	-	-	-	-	-
3.3 Sewage Service	**5,900**	**5,900**	-	-	-	-	-	-
Utilities-Sewage	5,900	5,900	-	-	-	-	-	-
3.4 Water Service	-	**200**	-	-	-	-	-	-
Utilities-Water	-	200	-	-	-	-	-	-

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
884122 - Construction and Contract Services	**$ 1,161,900**	**$ 1,161,800**	**$ 1,193,600**	**$ 737,200**	**$ 760,400**	**$ 763,700**	**$ 767,000**	**$ 770,300**
2.1 Salaries & Wages	**476,300**	**476,300**	**852,800**	**554,900**	**574,800**	**574,800**	**574,800**	**574,800**
2.3 Overtime	-	**800**	-	-	-	-	-	-
2.4 Employee Benefits	**120,800**	**120,600**	**282,000**	**168,800**	**172,100**	**175,400**	**178,700**	**182,000**
4.2 Supplies & Other	**8,600**	**7,600**	**9,300**	**13,500**	**13,500**	**13,500**	**13,500**	**13,500**
Capital Outlay less than $5,000	-	-	-	-	-	-	-	-
Memberships, Licenses & Subsc	2,000	1,300	-	3,000	3,000	3,000	3,000	3,000
Mileage and Parking	1,000	700	-	500	500	500	500	500
Office Supplies	-	-	3,700	-	-	-	-	-
Operating Supplies	-	-	4,600	-	-	-	-	-
Repairs & Maintenance-Softwar	3,500	3,500	-	-	-	-	-	-
Training and Internal Meetings	2,100	2,100	1,000	7,500	7,500	7,500	7,500	7,500
Travel	-	-	-	2,500	2,500	2,500	2,500	2,500
4.3 Contractual Services	**190,000**	**190,600**	**49,500**	-	-	-	-	-
Contractual Operating Services	190,000	190,600	49,500	-	-	-	-	-
2.5 Transition Services	**366,200**	**365,900**	-	-	-	-	-	-
Contractual Transition Services	366,200	365,900	-	-	-	-	-	-
884123 - Supply Chain Operations	**$ 758,300**	**$ 758,500**	**$ 777,000**	**$ 852,700**	**$ 889,900**	**$ 894,200**	**$ 898,200**	**$ 902,300**
2.1 Salaries & Wages	**519,600**	**518,600**	**652,900**	**632,600**	**665,700**	**665,700**	**665,700**	**665,700**
2.3 Overtime	-	**2,100**	-	-	-	-	-	-
2.4 Employee Benefits	**183,200**	**179,100**	**211,800**	**208,100**	**212,200**	**216,300**	**220,300**	**224,400**
4.2 Supplies & Other	**2,500**	**5,700**	**3,000**	**12,000**	**12,000**	**12,200**	**12,200**	**12,200**
Mileage and Parking	-	1,400	-	-	-	-	-	-
Office Supplies	-	1,400	1,000	1,000	1,000	1,100	1,100	1,100
Training and Internal Meetings	2,500	2,600	1,000	10,000	10,000	10,000	10,000	10,000
Travel	-	200	1,000	1,000	1,000	1,100	1,100	1,100
4.3 Contractual Services	**53,000**	**53,000**	**(90,700)**	-	-	-	-	-
Contractual Operating Services	53,000	53,000	(90,700)	-	-	-	-	-
884124 - Logistics and Materials	**$ 1,341,500**	**$ 1,341,500**	**$ 1,570,700**	**$ 1,723,900**	**$ 1,771,100**	**$ 1,783,500**	**$ 1,795,800**	**$ 1,824,900**
2.1 Salaries & Wages	**778,400**	**775,200**	**996,400**	**1,106,700**	**1,141,600**	**1,141,600**	**1,141,600**	**1,141,600**
2.3 Overtime	-	**400**	-	-	-	-	-	-
2.4 Employee Benefits	**311,800**	**321,800**	**366,900**	**403,800**	**411,700**	**419,700**	**427,600**	**435,500**
4.2 Supplies & Other	**237,200**	**229,100**	**194,400**	**197,200**	**201,300**	**205,500**	**209,600**	**229,400**
Advertising	-	-	-	2,000	2,000	2,000	2,000	2,000
Capital Outlay less than $5,000	-	-	-	-	-	-	-	-
Employee Uniform Expense	10,000	9,300	10,000	10,200	10,400	10,600	10,800	11,000
Memberships, Licenses & Subsc	-	-	4,500	4,600	4,700	4,800	4,900	5,000
Mileage and Parking	-	500	-	-	-	-	-	-
Office Supplies	-	9,800	3,700	3,800	3,900	4,000	4,100	5,000
Operating Supplies	98,500	98,400	76,100	70,600	72,200	73,800	75,400	82,000
Repairs & Maintenance-Buildin	112,500	99,800	92,900	94,700	96,600	98,600	100,500	102,000
Repairs & Maintenance-Equipm	10,000	600	1,000	1,000	1,000	1,100	1,100	2,400
Training and Internal Meetings	6,200	7,200	4,200	4,300	4,400	4,500	4,600	9,000
Travel	-	1,500	2,000	4,000	4,100	4,100	4,200	9,000
Tuition Refund	-	2,000	-	2,000	2,000	2,000	2,000	2,000
3.1 Electric	-	-	-	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**
Utilities-Electricity	-	-	-	3,000	3,000	3,000	3,000	3,000
3.2 Gas	-	**400**	**500**	**500**	**500**	**500**	**500**	**700**
Utilities-Gas	-	400	500	500	500	500	500	700
3.3 Sewage Service	**14,100**	**14,100**	**12,000**	**12,200**	**12,500**	**12,700**	**13,000**	**14,000**
Utilities-Sewage	14,100	14,100	12,000	12,200	12,500	12,700	13,000	14,000
3.4 Water Service	-	**500**	**500**	**500**	**500**	**500**	**500**	**700**
Utilities-Water	-	500	500	500	500	500	500	700

Expense Category	Sum of FY 2018 Amended Budget	FY 2018 Activity thru 06.30.2018	FY 2019 Board Adopted Budget	FY 2020 Department Requested	FY 2021 Department Requested	FY 2022 Department Requested	FY 2023 Department Requested	FY 2024 Department Requested
884125 - Enterprise Solutions	$ 104,700	$ 104,600	$ 440,000	$ 664,000	$ 667,100	$ 670,300	$ 673,400	$ 676,500
2.1 Salaries & Wages	84,500	84,500	288,300	502,400	502,400	502,400	502,400	502,400
2.3 Overtime	-	1,000	-	-	-	-	-	-
2.4 Employee Benefits	16,700	15,600	94,700	159,100	162,200	165,400	168,500	171,600
4.2 Supplies & Other	3,500	3,500	57,000	2,500	2,500	2,500	2,500	2,500
Memberships, Licenses & Subsc	-	-	-	1,500	1,500	1,500	1,500	1,500
Operating Supplies	-	-	50,000	-	-	-	-	-
Training and Internal Meetings	3,500	3,500	5,000	500	500	500	500	500
Travel	-	-	2,000	500	500	500	500	500
884126 - Owners' Representative	$ 97,000	$ 97,000	$ 309,200	$ 629,100	$ 620,500	$ 623,800	$ 626,300	$ 629,600
2.1 Salaries & Wages	56,300	56,600	193,000	532,900	532,900	532,900	532,900	532,900
2.4 Employee Benefits	3,700	3,400	52,200	148,000	150,900	153,800	156,700	159,600
4.2 Supplies & Other	-	-	64,000	26,700	15,600	16,300	16,200	16,900
Memberships, Licenses & Subsc	-	-	-	9,500	-	500	-	500
Mileage and Parking	-	-	-	500	500	500	500	500
Office Supplies	-	-	-	2,500	500	500	500	500
Operating Supplies	-	-	50,000	-	-	-	-	-
Training and Internal Meetings	-	-	12,000	12,200	12,500	12,700	13,000	13,200
Travel	-	-	2,000	2,000	2,100	2,100	2,200	2,200
2.5 Transition Services	37,000	37,000	-	-	-	-	-	-
Contractual Transition Services	37,000	37,000	-	-	-	-	-	-
5.1 Capital Program Allocation	-	-	-	(78,500)	(78,900)	(79,200)	(79,500)	(79,800)
Capital Program: Salaries & Wag	-	-	-	(78,500)	(78,900)	(79,200)	(79,500)	(79,800)
Grand Total	$ 13,330,900	$ 13,086,700	$ 13,935,600	$ 14,483,500	$ 14,644,400	$ 14,711,600	$ 14,760,800	$ 14,921,700

GLWA
Great Lakes Water Authority

Monthly Financial Report Binder

September 2018

Presented to the
Great Lakes Water Authority
Audit Committee
on December 21, 2018

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Appendix

Aged Accounts Receivable Report

Nicolette N. Bateson, CPA
Chief Financial Officer/Treasurer
735 Randolph Street, Suite 1608
Detroit, Michigan 48226
Phone: 313-964-9201

December 19, 2018

Greetings!

The September 2018 monthly financial report for the Great Lakes Water Authority provides an interim report of financial performance for the first three months of fiscal year 2019.

Highlights of this month's report include:

- ✓ Positive FY 2019 financial performance results to date;
- ✓ Identification of areas of potential risk so that we can mitigate those risks;
- ✓ Explanation of how GLWA financial elements fit together; and
- ✓ Identification of progress in financial operations.

This report binder, along with Chief Executive Officer Sue F. McCormick's monthly CEO Report and Key Performance Indicator report provide a full menu of operational and financial reports. These are available on our website at www.glwater.org.

This report format is new and will continue to evolve. Two changes in process for the October 2018 report are: 1) comparative fiscal year information for the interim financial statements and 2) reconciliation from revenue requirement (i.e. budget) basis vs accrual basis reports.

We thrive on feedback! Please send any comments or suggestions to me at CFO@glwater.org.

Thank you,

Nicolette N. Bateson, CPA
Chief Financial Officer & Treasurer

Budget to Actual Analysis

The Budget to Actual Analysis report includes the following three sections.

1. Revenue Requirement Budget Basis Analysis
2. Operations Budget – Major Operations & Maintenance Budget Category
3. Operations & Maintenance Budget – Major Budget Categories

Revenue Requirement Budget Basis Analysis

GLWA's annual revenue requirement aligns with a) the basis for calculating customer charges and b) the Master Bond Ordinance flow of funds. The budget basis is not the same as the full accrual basis used for financial reporting although the revenues and operations and maintenance expense are largely reported on an accrual basis. The primary deviation between the revenue requirement basis to financial reporting basis is the treatment of debt service, legacy pension obligations, and lease related activities. The Revenue Requirement Basis is foundational to GLWA's daily operations, financial plan, and of most interest to key stakeholders.

Table 1A - Water Revenue Requirement Budget and Table 1B - Sewer Revenue Requirement Budget presents a year-over-year budget to actual performance report. For both systems there were no budget amendments that change the totals. Therefore, only an "amended" budget column is represented. The revenue requirement budget is accounted for in the operations and maintenance fund for each system. Since this report is for September 2018, the pro-rata benchmark is 25.0% (3 of 12 months for the fiscal year).

Items of key interest discussed below are highlighted in gold on the Tables 1A (Water) and 1B (Sewer).

1. For *both* systems, FY 2019 revenues are at or above target and are consistent with the prior year (FY 2018) at the same time.
2. Operations and maintenance (O&M) expense for the *water* system is slightly above the pro-rata benchmark for FY 2019 at 28.4% which is largely due to the seasonal electric usage (subsequent tables follow which explain further). Conversely, *sewer* system O&M expenses are less than the pro-rata benchmark due to timing of expenses. It should be noted that the current versus prior year variance is due to significant month-end closing process improvements implemented during the latter half of FY 2018.
3. The remaining revenue requirements for *both* systems are generally funded on a 1/12th basis each month in accordance with the Master Bond Ordinance. The debt service amount shown on the table is accounted for on that same basis. In September

2018, the GLWA had a successful bond sale which will provide a positive budget variance for both *systems*. That amendment will be reported in a future month.

4. Overall total revenue requirements for *both* systems are in line with the benchmark.
5. For the sewer system, FY 2019 year-to-date revenue requirements exceed revenues by $5.7 million. This is a timing difference between revenues and revenue requirement which is expected to be reversed by mid-fiscal year.

Table 1A – Water Revenue Requirement Budget (year-over-year)

Water System	FY2018 AMENDED BUDGET	FY 2018 THRU 9/30/2017	Percent Year-to-Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 9/30/2018	Percent Year-to-Date
Revenues						
Wholesale Customer Charges	$ 310,019,800	$ 94,026,616	30.3%	$ 307,382,500	$ 93,867,345	30.5%
Retail Services Agreement	15,130,600	3,782,649	25.0%	20,181,400	5,081,526	25.2%
Investment Earnings	2,932,900	630,105	21.5%	3,802,300	827,915	21.8%
Other Revenues	35,900	77,051	214.6%	34,300	21,368	62.3%
Transfer In	-	70,460	0.0%	-	1,212,256	0.0%
Total Revenues	$ 328,119,200	$ 98,586,881	30.0%	$ 331,400,500	$ 101,010,409	30.5%
Revenue Requirements						
Operations & Maintenance Expense	$ 121,562,500	$ 14,415,156	11.9%	$ 121,562,600	$ 34,534,269	28.4%
O&M Legacy Pension	6,048,000	1,512,000	25.0%	6,048,000	1,512,000	25.0%
Debt Service	135,631,200	33,907,800	25.0%	134,214,600	33,553,650	25.0%
Accelerated Legacy Pension	6,268,300	1,567,075	25.0%	6,268,300	1,567,075	25.0%
Extraordinary Repair & Replacement Deposit	1,452,500	363,125	25.0%	-	-	0.0%
Lease Payment	22,500,000	5,625,000	25.0%	22,500,000	5,625,000	25.0%
Operating Reserve Deposit	323,700	80,925	25.0%	-	-	0.0%
Water Residential Assistance Program	1,678,600	419,650	25.0%	1,673,400	418,350	25.0%
Improvement & Extension Fund Deposit	32,654,400	-	0.0%	39,133,600	-	0.0%
Total Revenue Requirements	$ 328,119,200	$ 57,890,731	17.6%	$ 331,400,500	$ 77,210,344	23.3%
Net Difference		$ 40,696,150			$ 23,800,065	

Table 1B – Sewer Revenue Requirement Budget (year-over-year)

Sewer System	FY2018 AMENDED BUDGET	FY 2018 THRU 9/30/2017	Percent Year-to-Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 9/30/2018	Percent Year-to-Date
Revenues						
Wholesale Customer Charges	$ 271,429,300	$ 67,857,900	25.0%	$ 271,296,300	68,738,400	25.3%
Retail Services Agreement	178,969,100	44,742,300	25.0%	181,159,300	45,751,899	25.3%
Industrial Waste Control Charges	14,452,700	3,591,548	24.9%	15,000,800	2,329,766	15.5%
Pollutant Surcharges	5,099,000	1,663,041	32.6%	-	1,605,791	0.0%
Other Revenues	375,819	2,075,303	552.2%	485,200	178,049	36.7%
Investment Earnings	2,283,800	745,406	32.6%	4,085,700	1,297,295	31.8%
Transfer In	-	12,762	0.0%	-	360,309	0.0%
Bad Debt Expense Recovery	-	-	0.0%	-	-	0.0%
Total Revenues	$ 472,609,719	$ 120,688,261	25.5%	$ 472,027,300	$ 120,261,509	25.5%
Revenue Requirements						
Operations & Maintenance Expense	$ 190,988,019	24,380,839	12.8%	$ 191,079,386	$ 34,135,646	17.9%
O&M Legacy Pension	10,824,000	2,706,000	25.0%	10,824,000	2,706,000	25.0%
Debt Service	205,859,900	51,464,975	25.0%	214,600,700	53,650,175	25.0%
Accelerated Legacy Pension	11,620,700	2,905,175	25.0%	11,620,700	2,905,175	25.0%
Extraordinary Repair & Replacement Deposit	2,283,100	570,775	25.0%	-	-	0.0%
Lease Payment	27,500,000	6,875,000	25.0%	27,500,000	6,875,000	25.0%
Operating Reserve Deposit	341,600	85,400	25.0%	-	-	0.0%
Water Residential Assistance Program	2,313,700	578,425	25.0%	2,374,100	593,525	25.0%
Improvement & Extension Fund Deposit	20,878,700	5,219,675	25.0%	14,028,400	3,507,100	25.0%
Operating Transfer Out	-	8,182,821	0.0%	-	21,675,330	0.0%
Total Revenue Requirements	$ 472,609,719	$ 102,969,085	21.8%	$ 472,027,286	$ 126,047,951	26.7%
Net Difference		$ 17,719,176			$ (5,786,442)	

Operations & Maintenance Budget – Major Budget Categories

The year-over-year benchmark ratio as of September 30, 2018 is 25.0% (three months). When comparing FY 2018 to FY 2017 in Table 2, it would appear that the spending has increased. This is true in some instances (such as electrical usage and sludge removal and disposal for the water operations group). The greater impact, however, is that the Financial Reporting & Accounting Team has implemented a full accrual basis for interim financial statements during FY 2018. This anomaly will decrease as we proceed through FY 2019.

Also, for the first time, an internal charge cost center for employee benefits is shown in the table below. If the number is positive, it indicates that the internal cost allocation rate

charges to other cost centers is not sufficient. A negative number indicates a surplus in the internal cost center. A moderate surplus is preferred as it provides a hedge for mid-year benefit program cost adjustments (premiums adjust on January 1 each year).

Table 2 - Operations & Maintenance Budget – Major Budget Categories

Major Budget Categories	FY2018 AMENDED BUDGET	FY 2018 THRU 9/30/2017	Percent Year-to-Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 9/30/2018	Percent Year-to-Date
Water	$ 73,510,521	$ 8,171,952	11.1%	$ 66,596,200	$ 20,457,805	30.7%
Sewer	124,106,353	15,192,732	12.2%	118,318,900	26,192,307	22.1%
Centralized	82,628,680	11,484,183	13.9%	99,044,500	17,344,990	17.5%
Administrative	32,304,965	4,635,302	14.3%	28,682,900	5,646,951	19.7%
Employee Benefits	-	(688,174)	0.0%	-	(972,137)	0.0%
Total Revenues	$ 312,550,519	$ 38,795,995	12.4%	$ 312,642,500	$ 68,669,915	22.0%

Alignment of Operations & Maintenance Budget Priorities - Expense Variance Analysis

The purpose of Table 3 is to evaluate whether the actual spend rate within a category is alignment with the budget. Given the effort to develop an accurate budget, a variance is a red flag of a *potential* budget amendment or misalignment of priorities.

Notable items are highlighted in Table 3.

Overtime: This category is slightly higher than the benchmark. Internal discussions are underway to evaluate the causes for this variance.

Personnel Costs: This is the first quarter since GLWA's inception that budget and actual are closely aligned given the number of vacancies as a result of the stand-up of the new entity.

Electricity: See Table 4 for a further analysis.

Table 3 – Expense Variance Analysis

Expense Categories Entity-wide	FY2018 AMENDED BUDGET	FY 2018 THRU 9/30/2017	Percent Year-to-Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 9/30/2018	Percent Year-to-Date	Dollar Variance from 25% Favorable/ (Unfavorable)
2.1 Salaries & Wages	$ 57,113,650	$ 12,078,857	21.1%	$ 64,160,283	$ 14,492,747	22.6%	1,547,324
2.2 Workforce Development	661,576	111,223	16.8%	740,246	176,715	23.9%	8,346
2.3 Overtime	6,516,629	1,568,612	24.1%	6,813,341	1,841,093	27.0%	(137,758)
2.4 Employee Benefits	20,998,861	5,475,800	26.1%	22,255,000	6,334,650	28.5%	(770,900)
2.5 Transition Services	13,865,178	1,378,310	9.9%	11,574,649	2,104,903	18.2%	788,759
2.6 Personnel Transition Adjustment	(1,557,200)	-	0.0%	(3,070,415)	-	0.0%	(767,604)
Personnel Costs	*97,598,695*	*20,612,801*	*21.1%*	*102,473,104*	*24,950,109*	*24.3%*	668,167
3.1 Electric	42,324,400	4,528,977	10.7%	42,146,979	13,683,081	32.5%	(3,146,336)
3.2 Gas	7,029,500	341,623	4.9%	6,871,400	1,391,193	20.2%	326,657
3.3 Sewage Service	2,030,487	159,490	7.9%	2,548,879	362,967	14.2%	274,253
3.4 Water Service	4,587,600	442,170	9.6%	5,783,071	1,147,858	19.8%	297,910
Utilities	*55,971,987*	*5,472,260*	*9.8%*	*57,350,329*	*16,585,098*	*28.9%*	(2,247,516)
4.1 Chemicals	13,340,680	2,409,122	18.1%	16,620,930	3,566,430	21.5%	588,803
4.2 Supplies & Other	32,811,029	3,437,930	10.5%	30,575,370	4,106,584	13.4%	3,537,259
4.3 Contractual Services	113,680,175	9,435,674	8.3%	106,484,936	22,659,653	21.3%	3,961,581
5.1 Capital Program Allocation	(2,012,930)	(340,409)	16.9%	(4,000,000)	(742,752)	18.6%	(257,248)
5.2 Shared Services	(10,109,500)	(1,871,737)	18.5%	(9,123,100)	(1,871,282)	20.5%	(409,494)
6.0 Capital Outlay	8,960,067	328,529	3.7%	5,941,845	388,212	6.5%	1,097,249
7.0 Unallocated Reserve	2,310,615	-	0.0%	.	-	0.0%	1,579,772
8.0 Employee Benefits Fund	-	(688,174)	0.0%	-	(972,137)	0.0%	972,137
Total Expenses	$ 312,550,819	$ 38,795,995	12.4%	$ 312,642,500	$ 68,669,915	22.0%	9,490,710

Electric Utility Usage Analysis

Table 4 – Electricity Variance Analysis provides a list of cost centers with a negative variance greater than $25,000 on a pro-rata basis through September 30, 2018. These variances are not unexpected given the seasonality of operations with higher demand for water in the first and last fiscal year quarters.

Table 4 – Electricity Variance Analysis

Operating Area	Cost Center	FY 2019 AMENDED BUDGET	FY 2019 THRU 9/30/2018	FY 2019 Percent Year-to-Date	Dollar Variance from 25% Favorable/ (Unfavorable)
Water Operations	Lake Huron Water Plant	$ 6,500,000	$ 2,612,558	40.2%	$ (987,558)
Water Operations	Imlay Pumping Station	1,750,000	1,289,556	73.7%	(852,056)
Water Operations	Springwells Water Plant	3,250,000	1,333,444	41.0%	(520,944)
Water Operations	North Service Center Pumping Station	2,100,000	800,962	38.1%	(275,962)
Water Operations	Northeast Water Plant	4,000,000	1,228,606	30.7%	(228,606)
Water Operations	West Service Center Pumping Station	700,000	364,536	52.1%	(189,536)
Water Operations	Franklin Road Pumping Station	825,000	369,066	44.7%	(162,816)
Water Operations	Water Works Park	2,000,000	631,344	31.6%	(131,344)
Water Operations	Rochester Pumping Station	200,000	166,384	83.2%	(116,384)
Sewer Operations	BDF, COF & Hauling	1,099,000	385,336	35.1%	(110,586)
Water Operations	Adams Road Pumping Station	550,000	220,289	40.1%	(82,789)
Water Operations	Southwest Water Plant	1,300,000	407,556	31.4%	(82,556)
Water Operations	Ypsilanti Pumping Station	320,000	149,127	46.6%	(69,127)
Water Operations	Ford Rd Pumping Station	350,000	143,435	41.0%	(55,935)
Water Operations	Wick Road Pumping Station	475,000	153,849	32.4%	(35,099)
Water Operations	Joy Road Pumping Station	600,000	178,647	29.8%	(28,647)

The Interim Financial Statements report includes the following four tables.

1. Statement of Net Position - All Funds Combined
2. Statement of Revenues, Expenses and Changes in Net Position – All Funds Combined
3. Supplemental Schedule of Operations & Maintenance Expenses -All Funds Combined
4. Supplemental Schedule of Nonoperating Expenses – All Funds Combined

The GLWA utilizes four funds daily. At the macro level for financial reporting purposes, the GLWA has two primary funds: *Water Fund* and *Sewage Disposal Fund*. These funds represent the combined total of four sub-funds for each system that are used to properly account for sources and uses of funds. Those sub-funds for each system are: *Operations & Maintenance Fund*, *Improvement & Extension Fund*, *Construction Bond Fund, and Capital Asset Fund*.

Statement of Net Position – All Funds Combined (Unaudited)

Explanatory notes follow the Statement of Net Position as shown in Table 1 below.

Table 1 – Statement of Net Position - All Funds Combined (Unaudited)
As of September 30, 2018

	Water	Sewage Disposal	Total Business-type Activities
Assets			
Cash (*a*)	$ 141,330,000	$ 217,593,000	$ 358,923,000
Investments (*a*)	391,095,000	259,032,000	650,128,000
Accounts Receivable	117,642,000	61,596,000	179,238,000
Due from Other Funds (b)	12,605,000	25,667,000	38,272,000
Other Assets (c)	610,630,000	376,948,000	987,128,000
Cash Held FBO DWSD Advance (d)	-	56,964,000	56,964,000
Capital Assets, net of depreciation	1,756,217,000	2,567,519,000	4,323,736,000
Construction Work in Process	159,028,000	168,640,000	327,669,000
Total Assets	3,188,548,000	3,733,510,000	6,922,058,000
Deferred Inflow (e)	111,862,000	216,977,000	328,839,000
Liabilities			
Liabilities – Short-Term (f)	128,102,000	141,211,000	269,312,000
Due to Other Funds (b)	-	38,272,000	38,272,000
Other Liabilities (g)	2,731,000	6,125,000	8,857,000
Cash Held FBO DWSD (d)	15,827,000	-	15,827,000
Liabilities – Long-Term (h)	3,143,362,000	3,817,916,000	6,961,277,000
Total Liabilities	3,290,021,000	4,003,524,000	7,293,545,000
Deferred Outflow (e)	65,700,000	59,182,000	124,882,000
Net Position Deficit (i)	$ (55,312,000)	$ (112,219,000)	$ (167,530,000)

Note: Totals may be off due to rounding.

Footnotes to Statement of Net Position

a. *Cash and Investments* include restricted amounts.
b. *Due from Other Funds* and *Due to Other Funds* is shown at the gross level for sub-fund activity.
c. *Other Assets* primarily consists of the contractual obligation receivable from DWSD related to reimbursement of bonded indebtedness for local system improvements.
d. *Cash Held FBO Advance (for benefit of) DWSD* and *Cash Held FBO DWSD* represents the net difference between DWSD retail cash received from customers and net financial commitments as outlined in the Master Bond Ordinance. This includes a loan receivable for sewer budgetary shortfall associated with activity through June 30, 2017 which will be finalized as part of Reconciliation Committee discussions.
e. *Deferred Inflow* and *Deferred Outflow* relate to financing activity and GLWA's share of the legacy General Retirement System (GRS) pension obligation.
f. *Liabilities - Short-term* include accounts payable, retainage payable, and certain accrued liabilities. Some items, such as compensated absences and worker's compensation, are reviewed periodically but are only adjusted on an interim basis if there is a material change.
g. *Other Liabilities* account for the cash receipts set aside for the Budget Stabilization Fund and the Water Residential Assistance Program.
h. *Liabilities – Long-term* include bonds payable, lease payable, and legacy GRS pension liabilities.
i. *Net Position Deficit* is defined by the accounting standards as the residual of all other elements presented in a statement of financial position. It is the difference between (a) assets and deferred outflows of resources and (b) liabilities and deferred inflows of resources. A net deficit occurs when the liabilities and deferred inflows exceed assets and deferred outflows. GLWA's net deficit is largely driven by an increase in depreciation expense as a result of the increase in the acquisition valuation approach for recording capital asset values in the opening Statement of Net Position on January 1, 2016. Efforts are underway to evaluate the net operating effect of this matter over the long term.

Statement of Revenues, Expenses and Changes in Net Position – All Funds Combined

This statement, shown in Table 2, is presented in summary format. Supplemental schedules follow the analysis: Table 3 – Operations and Maintenance Expenses Supplemental Schedule and Table 4 – Supplemental Schedule of Nonoperating Expenses.

It should be noted that the FY 2018 year-end close and audit will be complete in December 2018. The impact of the reversal of year-end closing accruals was not fully estimable at the

time of the September 2018 month-end close. In addition, the accrual basis of revenues and operations and maintenance expense vary from the revenue requirement basis presented elsewhere in the September 2018 Financial Report Binder.

Water Fund

- ✓ Increase in Water Fund Net Position is $5 million or 5.2% of total revenues.
- ✓ Wholesale water customer charges of $93 million account for 94.8% of Water System revenues.
- ✓ Local system (DWSD) charges of $5 million account for 5.1% of total operating revenues. These are billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of $70 million represent 71.1% of total operating revenue. Depreciation is the largest operating expense at $36 million or 51.0% of operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals $28 million or 28.9% of operating revenue.
- ✓ The largest category within nonoperating activities is interest expense of $23 million.

Sewage Disposal Fund

- ✓ Increase in Sewer Fund Net Position is $6 million, or 5.1% of total revenues.
- ✓ Wholesale sewer customer charges of $68 million account for 58.0% of Sewer System revenues. Wholesale customer charges are billed one-twelfth each month based on an agreed-upon historical average "share" of each customer's historical flows which are formally revisited every five years. The result is no revenue shortfall or overestimation.
- ✓ Local system (DWSD) charges of $45 million account for 38.6% of total operating revenues. These are also billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of $77 million represent 65.4% of total operating revenue. Depreciation is the largest operating expense at $43 million or 56.0% of total operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals $41 million or 34.5% of operating revenue.
- ✓ The largest category within nonoperating activities is interest expense of $30 million.

Table 2 – Statement of Revenues, Expenses and Changes in Net Position – All Funds Combined (Unaudited) For the Three Months ended September 30, 2018

	Water	Percent of Revenue	Sewage Disposal	Percent of Revenue	Change in Net Position
Revenue					
Wholesale customer charges	$ 93,867,000	94.8%	$ 68,738,000	58.0%	162,606,000
Local system charges	5,082,000	5.1%	45,752,000	38.6%	50,833,000
Industrial waste charges	-		2,361,000	2.0%	2,361,000
Other revenue	16,000	0.1%	144,000	0.1%	160,000
Pollutant surcharges	-		1,606,000	1.4%	1,606,000
Bad Debt Recovery	-		-		-
Total Revenues	**$ 98,965,000**	**100.0%**	**$ 118,601,000**	**100.0%**	**$ 217,566,000**
Operating Expenses					
Operations and Maintenance Expenses	34,464,000	34.8%	34,113,000	28.8%	68,577,000
Depreciation	35,939,000	36.3%	43,458,000	36.6%	79,397,000
Total Operating Expenses	**70,403,000**	**71.1%**	**77,571,000**	**65.4%**	**147,974,000**
Operating Income	28,562,000	28.9%	41,030,000	34.6%	69,592,000
Total Nonoperating (Revenue)/Expense	23,438,000	23.7%	34,930,000	29.4%	58,368,000
Increase in Net Position	**5,124,000**	**5.2%**	**6,101,000**	**5.1%**	**11,225,000**
Net Position Deficit, Beginning of year	(60,435,000)		(118,319,000)		(178,755,000)
Net Position Deficit, End of Year	**$ (55,312,000)**		**$ (112,219,000)**		**$ (167,530,000)**

Totals may be off due to rounding.

Supplemental Schedule of Operations & Maintenance Expenses

This Supplemental Schedule of Operations & Maintenance Expenses (O&M) schedule is shown on the next page in Table 3.

- ✓ Core expenses for water and sewage disposal systems is utilities (24.2% of total O&M expenses) and chemicals (5.2%).
- ✓ Personnel (35.0%) of total O&M expenses include all salaries, wages, and benefits for employees as well as staff augmentation contracts that fill a vacant position (contractual transition services).
- ✓ Contractual services (33.0%) includes:
  - o Water System costs of sludge removal and disposal services at the Northeast, Southwest and Springwells Water Treatment Plants (approximately $2.1 million);
  - o Sewage Disposal System costs for the operation and maintenace of the biosolids dryer facility (approximately $3.7 million); and

- Centralized and Administrative contractual costs allocated to both systems for information technology, building maintenace, and other services.

Table 3 – Supplemental Schedule of Operations & Maintenance Expenses – All Funds Combined (Unaudited) For the Three Months ended September 30, 2018

Expenditure	Water	Percent of Total	Sewage Disposal System	Percent of Total	Combined	Percent of Total
Chemicals	$ 1,440,000	4.2%	$ 2,127,000	6.2%	$ 3,566,000	5.2%
Contractual services	12,790,000	37.1%	9,869,000	28.9%	22,660,000	33.0%
Personnel						
Salaries & Wages	6,810,000	19.8%	9,964,000	29.2%	16,774,000	24.5%
Overtime	1,023,000	3.0%	818,000	2.4%	1,841,000	2.7%
Benefits	2,857,000	8.3%	2,506,000	7.3%	5,363,000	7.8%
Total Personnel	10,690,000	31.0%	13,288,000	39.0%	23,978,000	35.0%
Supplies and other	1,351,000	3.9%	3,050,000	8.9%	4,402,000	6.4%
Utilities						
Electric	10,365,000	30.1%	3,319,000	9.7%	13,683,000	20.0%
Gas	42,000	0.1%	1,349,000	4.0%	1,391,000	2.0%
Sewage	96,000	0.3%	267,000	0.8%	363,000	0.5%
Water	-	0.0%	1,148,000	3.4%	1,148,000	1.7%
Total Utilities	10,502,000	30.5%	6,083,000	17.8%	16,585,000	24.2%
Capital program allocation	(450,000)	-1.3%	(293,000)	-0.9%	(743,000)	-1.1%
Shared services allocation	(1,859,000)	-5.4%	(12,000)	0.0%	(1,871,000)	-2.7%
Operations and Maintenance Expenses	**$ 34,464,000**	100.0%	**$ 34,113,000**	100.0%	**$ 68,577,000**	100.0%

Totals may be off due to rounding.

Supplemental Schedule of Nonoperating Expenses – All Funds Combined

The Supplemental Schedule of Nonoperating Expenses – All Funds Combined is shown on Table 4 on the next page. Significant categories are noted below.

- ✓ Interest expense, the largest category of nonoperating expenses, is due to three sources below:
  - Bonded debt;
  - Lease obligation for the regional assets from the City of Detroit; and
  - Other obligations such as an obligation payable to the City of Detroit for an allocation BC Notes related to assumed DWSD liabilities; acquisition of raw water rights related to KWA Pipeline.
- ✓ Interest income on contractual obligation from DWSD;
- ✓ Investment earnings.

Table 4 – Supplemental Schedule of Nonoperating Expenses – All Funds Combined (Unaudited) For the Three Months ended September 30, 2018

Nonoperating (Revenue)/Expense	**Water**	**Sewage Disposal**	**Combined**
Interest income contractual obligation	$ (5,711,000)	$ (3,754,000)	$ (9,465,000)
Investment earnings	(3,420,000)	(3,169,000)	(6,588,000)
Other nonoperating revenue	(5,000)	(3,000)	(8,000)
Interest expense			
Bonded debt	28,915,000	34,220,000	63,135,000
Lease obligation	4,436,000	5,422,000	9,858,000
Other obligations	1,242,000	398,000	1,640,000
Total interest expense	34,593,000	40,040,000	74,633,000
Other nonoperating expense	420,000	657,000	1,076,000
Amortization, issuance costs, debt	(3,403,000)	1,159,000	(2,244,000)
Amortization, raw water rights	963,000	-	963,000
Total Nonoperating (Revenue)/Expense	**$ 23,438,000**	**$ 34,930,000**	**$ 58,368,000**

Financial Activity Charts

Chart 1 – Capital Outlay

Capital Outlay spend is **$2,520,094** through September 30, 2018. The expenses in this chart do not reflect any activity in the Capital Improvement Program. The allocation is shown in the chart below.

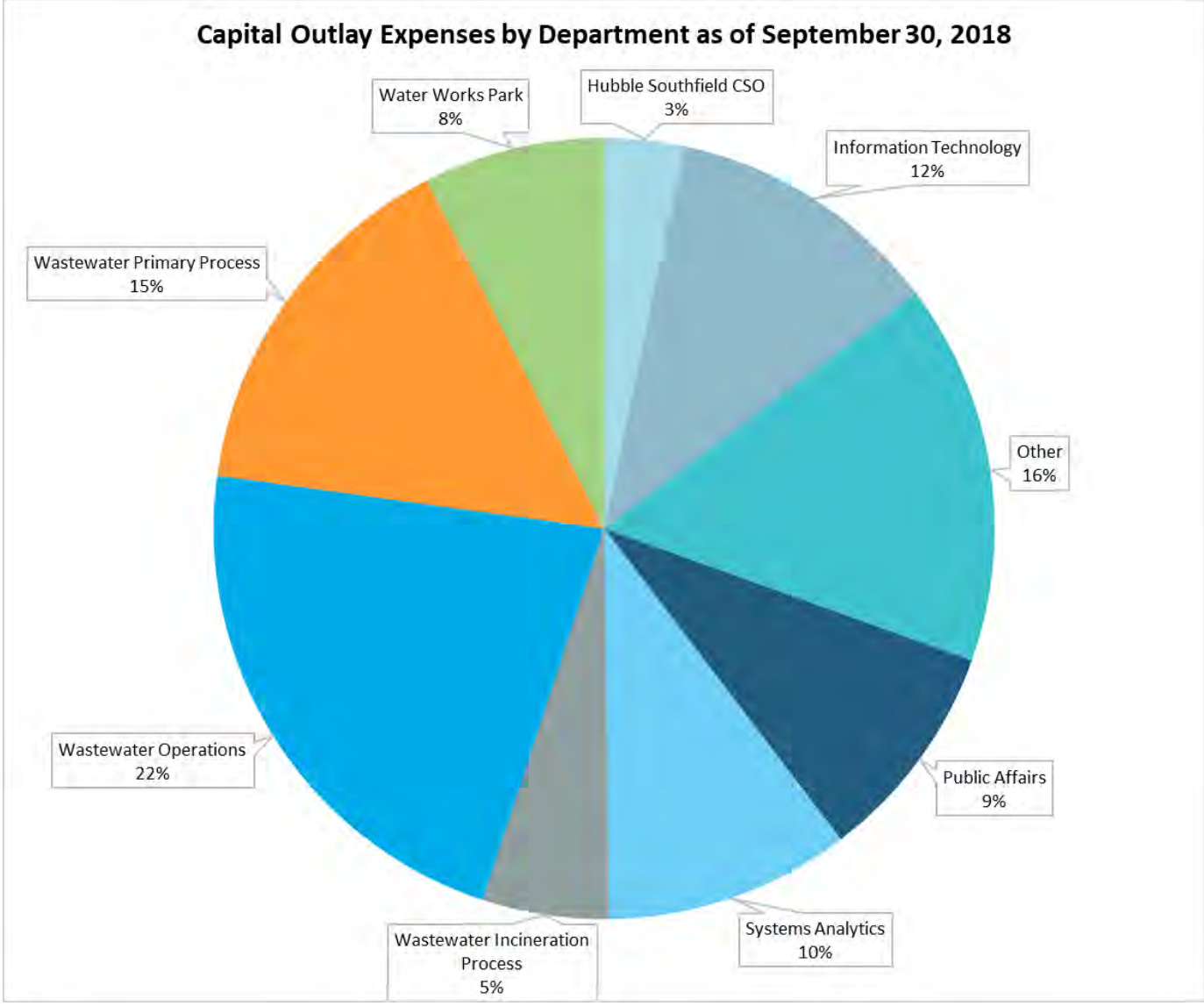
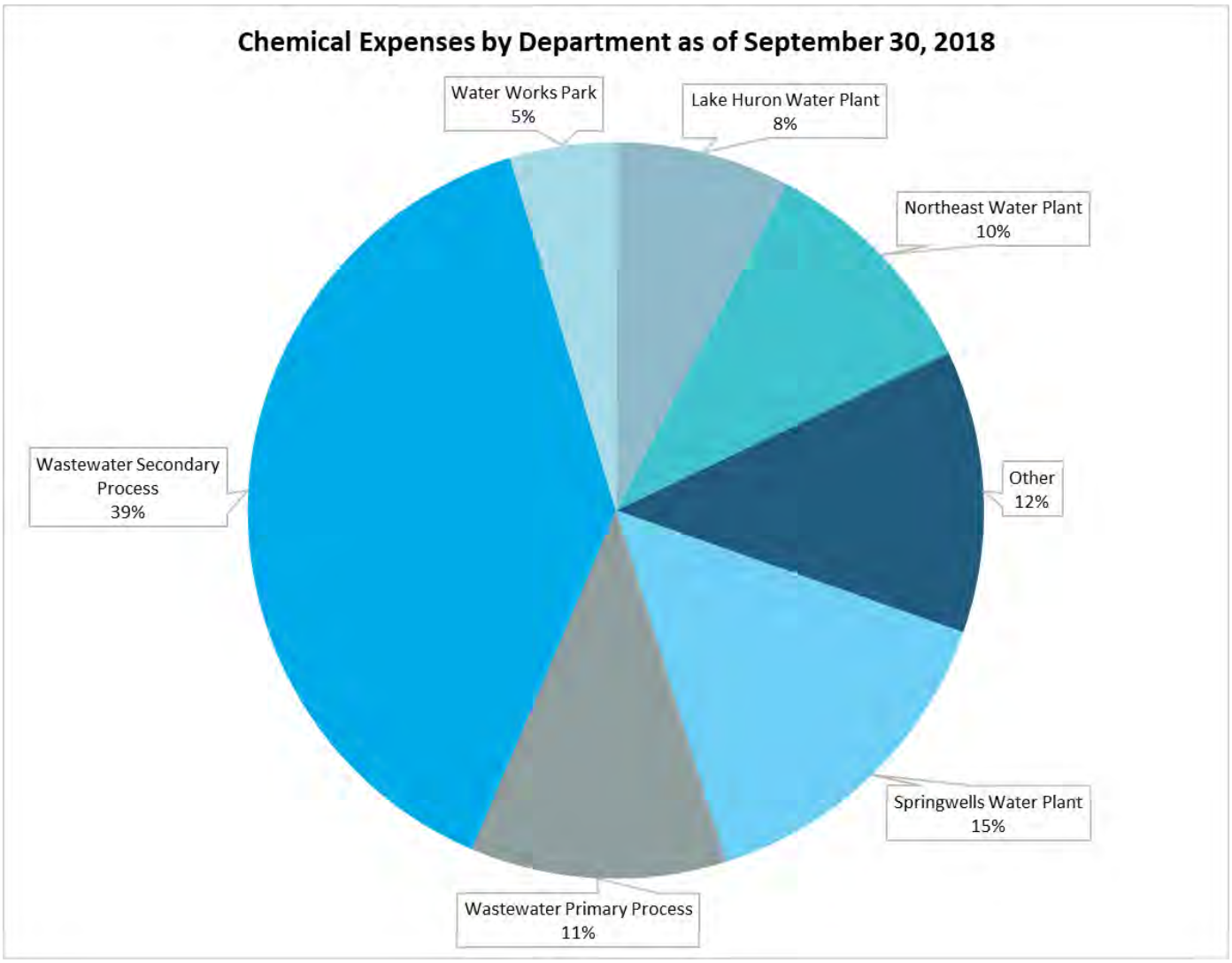


Chart 2 - Chemical Spend

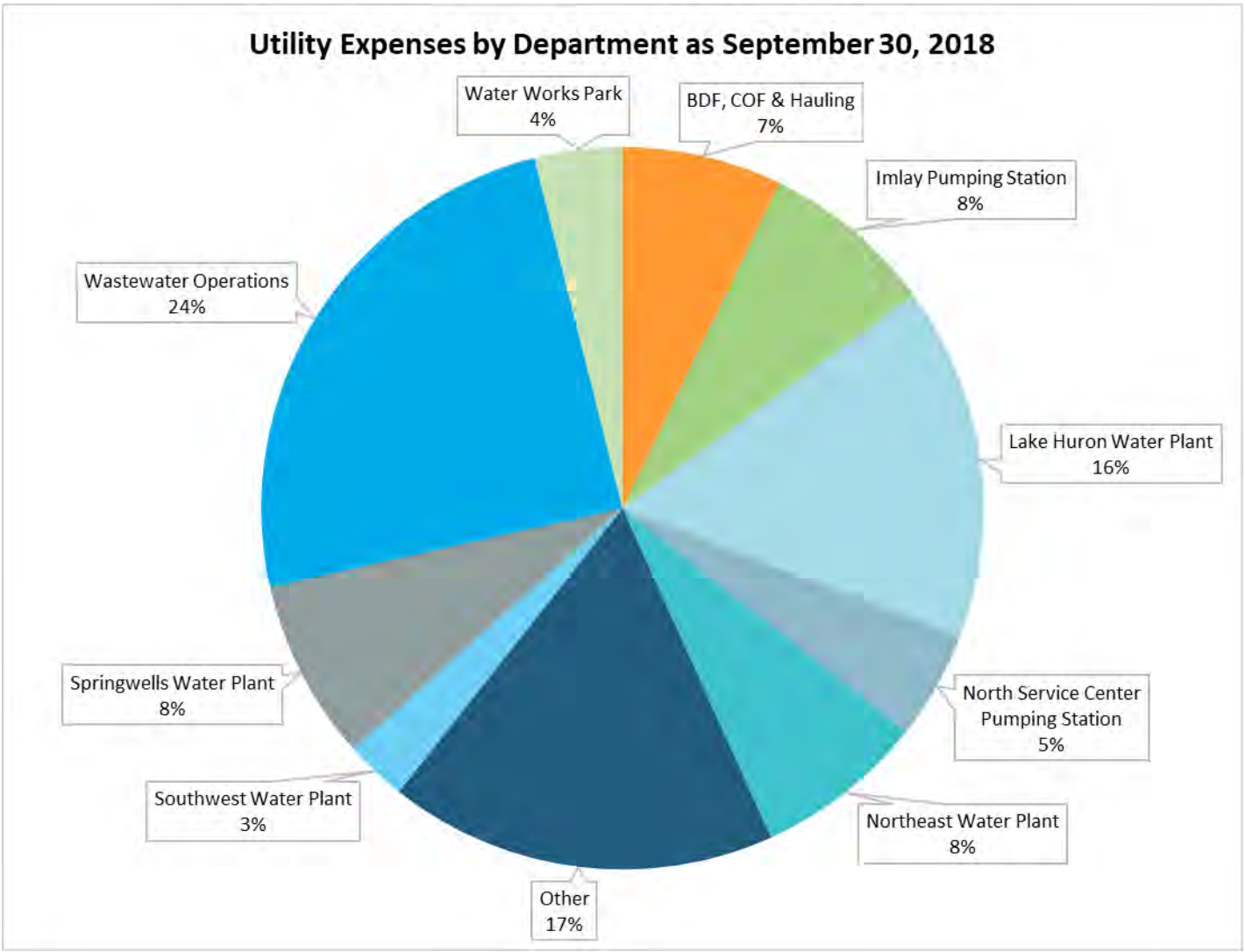
Chemical spend is **$3,566,430** through September 30, 2018. The allocation is shown in the chart below.



"Other" includes CSO, portions of the Wastewater process and two departments from Water.

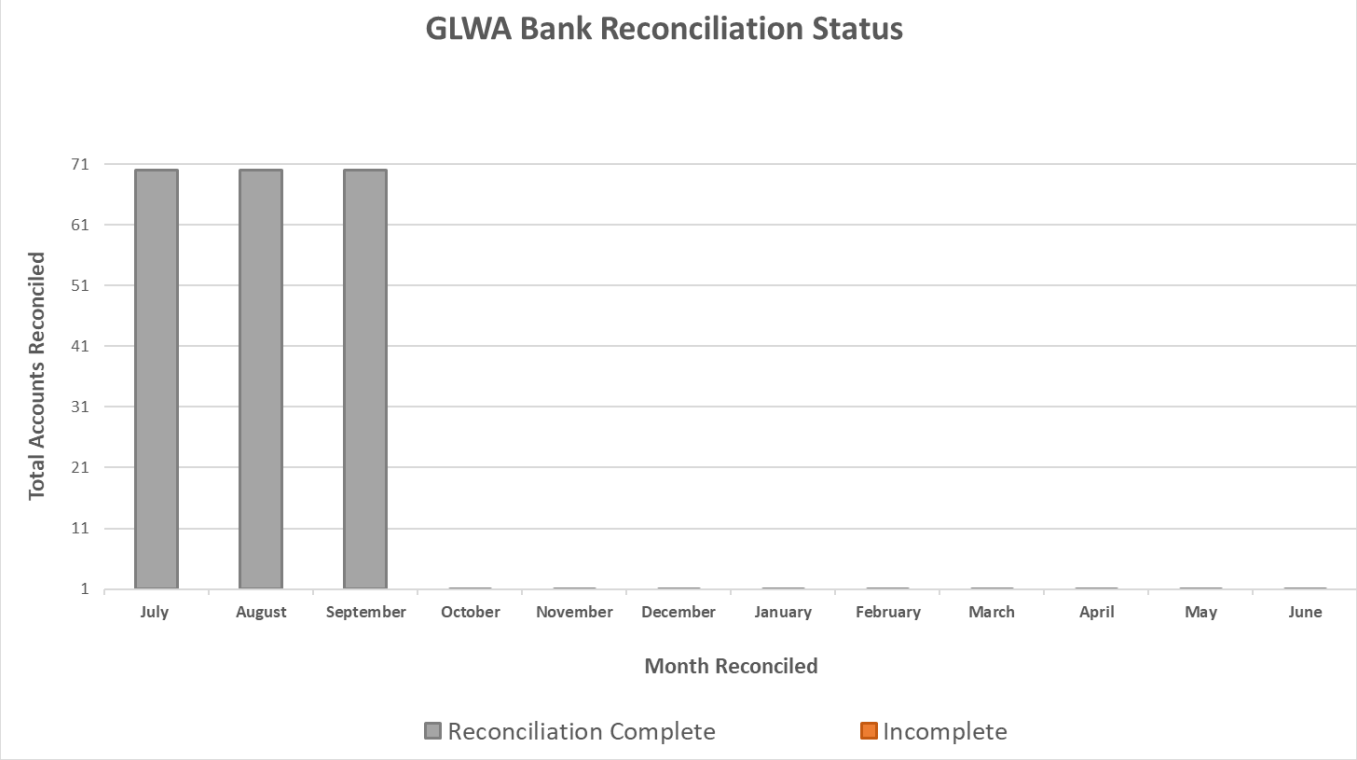
Chart 3 - Utility Spend

Utility spend is **$16,585,098** through September 30, 2018. The allocation is shown in the chart below.



Bank Reconciliation Status

A measure of the progress made in the month-end close process which includes bank reconciliations completed soon after month end.



This report includes the following:

1. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by GLWA
2. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by DWSD

MBO Transfers to Accounts Held by GLWA

GLWA Transfers: The Treasury Department completes required MBO transfers on the first business day of each month. Treasury completes these transfers in accordance with the Great Lakes Water Authority (GLWA) and Detroit Water & Sewerage Department (DWSD) budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually.

Monthly transfers for Operations & Maintenance, Pension, and Water Residential Assistance Program (WRAP) are one-twelfth of the annual, budgeted amount. Budget stabilization should not require additional funding due to new, baseline funding levels established as part of the April 2018 Memorandum of Understanding but is included to reflect historical activity. Treasury completes annual Extraordinary Repair & Replacement transfers as directed based on budget and year-end fund status.

Table 1 – GLWA Water Transfers reflects the required transfers for FY 2019 completed through September 3, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. Since January 1, 2016, MBO transfers for Water totaling $399,300,798 have been transferred to accounts held by GLWA.

Table 2 – GLWA Sewer Transfers reflects the required transfers for FY 2019 completed through September 3, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. Since January 1, 2016, MBO transfers for Sewer totaling $608,885,344 have been transferred to accounts held by GLWA.

Table 1 – GLWA Water Transfers

WATER							
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
Total FY 2016	$71,052,000	$6,037,100	$10,297,200	$1,983,300	$2,326,900	$606,000	$92,302,500
Total FY 2017	111,879,600	6,037,200	10,297,200	2,077,200	360,000	-	130,651,200
Total FY 2018	121,562,604	6,048,000	10,695,696	2,159,400	-	-	140,465,700
FY 2019							
July 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
August 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
September 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
Total FY 2019	31,180,425	$1,512,000	$2,673,924	$515,049	$0	$0	$35,881,398
Total Water Since Jan 1 2016	$335,674,629	$19,634,300	$33,964,020	$6,734,949	$2,686,900	$606,000	$399,300,798

Table 2 – GLWA Sewer Transfers

SEWER							
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
Total FY 2016	$100,865,600	$10,838,400	$14,025,800	$2,523,400	$5,591,700	$779,600	$134,624,500
Total FY 2017	175,858,800	10,838,400	14,026,800	2,654,400	2,654,400	-	206,032,800
Total FY 2018	191,079,396	10,824,000	14,687,496	2,760,804	-	-	219,351,696
FY 2019							
July 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
August 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
September 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
Total FY 2019	$42,580,475	$2,308,000	$3,339,224	$648,649	$0	$0	$48,876,348
Total Sewer Since Jan 1 2016	$510,384,271	$34,808,800	$46,079,320	$8,587,253	$8,246,100	$779,600	$608,885,344

MBO Transfers to Accounts Held by DWSD

DWSD Transfers: The Treasury Department completes required MBO transfers on the first business day of each month. Treasury completes these transfers in accordance with the GLWA and DWSD budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually. GLWA Public Finance communicates planned transfers in advance of the first business day of each month and GLWA Treasury sends confirmation of transfers made to DWSD Treasury.

Monthly transfers for Operations & Maintenance and Pension are one-twelfth of the annual, budgeted amount. The annual lease payment, as stated in the Water & Sewer Lease Agreements, is $22,500,000 for Water and $27,500,000 for Sewer. The monthly lease transfer is one-twelfth of the amount as stated in the Lease agreements unless otherwise designated by DWSD. Per Section 3.5 of the Lease, the Lease payment may be used for (a) bond principal and interest for Local System Improvements, (b) bond principal and interest for the City's share of common-to-all System Improvements, and (c) Local System improvements.

Table 3 – DWSD Water Transfers reflects the required transfers for FY 2019 completed through September 3, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. For FY 2016, $2,326,900 of the lease payment was directed to offset a portion of debt service. For FY 2018, a DWSD budget adjustment resulted in a reduction in the lease transfer of $1,875,000. For FY 2019, $3,949,200 of the lease payment will be directed to offset a portion of debt service. This offset will be recognized over the year as a reduction in the monthly transfer amount. Since January 1, 2016, MBO transfers for Water totaling $188,455,879 have been transferred to accounts held by DWSD.

Table 4 – DWSD Sewer Transfers reflects the required transfers for FY 2019 completed through September 3, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. For FY 2016, $19,991,500 of the lease payment was directed to offset a portion of debt service. For FY 2018, a DWSD budget adjustment resulted in a reduction in the lease transfer of $9,166,664. For FY 2019, $4,864,000 of the lease payment will be

directed to offset a portion of debt service. This offset will be recognized over the year as a reduction in the monthly transfer amount. Since January 1, 2016, MBO transfers for Sewer totaling $207,152,903 have been transferred to accounts held by DWSD.

Table 3 – DWSD Water Transfers

WATER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Water
Total FY 2016	$ 26,185,600	$ 4,262,700	$ 20,173,100	$ 50,621,400
Total FY 2017	$ 33,596,400	$ 4,262,400	$ 22,500,000	$ 60,358,800
Total FY 2018	$ 35,059,704	$ 4,272,000	$ 20,625,000	$ 59,956,704
FY 2019				
July 2018	$ 2,957,025	$ 356,000	$ 1,545,900	$ 4,858,925
August 2018	2,957,025	356,000	1,545,900	4,858,925
September 2018	5,676,792	238,000	1,886,333	7,801,125
Total FY 2019	$ 11,590,842	$ 950,000	$ 4,978,133	$ 17,518,975
Total Water Since Jan 1 2016	$ 106,432,546	$ 13,747,100	$ 68,276,233	$ 188,455,879

Table 4 – DWSD Sewer Transfers

SEWER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Sewer
Total FY 2016	$ 19,774,300	$ 2,861,800	$ 7,508,500	$ 30,144,600
Total FY 2017	$ 41,535,600	$ 2,862,000	$ 27,500,000	$ 71,897,600
Total FY 2018	$ 60,517,992	$ 2,856,000	$ 18,333,336	$ 81,707,328
FY 2019				
July 2018	$ 5,676,792	$ 238,000	$ 1,886,333	$ 7,801,125
August 2018	5,676,792	238,000	1,886,333	7,801,125
September 2018	5,676,792	238,000	1,886,333	7,801,125
Total FY 2019	$ 17,030,376	$ 714,000	$ 5,658,999	$ 23,403,375
Total Sewer Since Jan 1 2016	$ 138,858,268	$ 9,293,800	$ 59,000,835	$ 207,152,903

The Monthly Wholesale Billings, Receivables, & Collections Report includes the following.

1. Wholesale Water Billings and Collections
2. Wholesale Sewer Billings and Collections
3. City of Highland Park Billings and Collections
4. Wholesale Accounts Receivable Aging Report

Wholesale Water Billings and Collections

Wholesale Water Contracts: Great Lakes Water Authority (GLWA) provides wholesale water service to 87 member-partners through a variety of service arrangements.

Service Arrangement Type*

Model Contract	81
Emergency	1
Older Contracts	5
Total	87

** Note: Services are provided to the Detroit Water & Sewerage Department (DWSD) via a Water and Sewer Services Agreement (WSSA). See the "Retail Revenues, Receivables, and Collections Report" section of this monthly report.*

Wholesale Water Billing Basis: Beginning with FY 2016, wholesale water charges were restructured to create a more stable revenue stream by using a historical rolling average to project customer volumes which accounts for 40% of the monthly charges and 60% of the annual customer revenue requirement as a monthly fixed charge.

Table 1 - Wholesale Water Billings shows the FY 2019 water billed usage and revenues. As of September 30, 2018, the billed usage was at 102.66% of budget and billed revenue at 101.40% of budget. Billings and usage from the City of Flint *are* included as they were assumed in the FY 2019 Budget.

Wholesale Water Collections: The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

Table 2 - Wholesale Water Collections shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. Variability in collections in the current year are associated with timing of the billing cycle. Bills for December, February and August were posted later than usual due to holiday conflicts and higher volumes of meter reads requiring review (associated with meter issues and water main breaks). While at times unavoidable, the GLWA billing team is identifying steps to prevent delays wherever possible.

Table 1 – FY 2019 Wholesale Water Billings Report

WHOLESALE WATER CUSTOMERS*								
	FY 2019 - Budget			FY 2019 - Actual			Variance	
Month	Volume	Revenue	Unit Revenue	Volume	Revenue	Unit Revenue	Volume	Revenue
	Mcf	*$*	*$/Mcf*	*Mcf*	*$*	*$/Mcf*	*Mcf*	*$*
July	1,632,120	30,347,500	18.59	1,800,256	32,122,653	17.84	168,136	1,775,153
August	1,518,130	29,405,800	19.37	1,490,896	29,144,135	19.55	(27,234)	(261,665)
September	1,354,440	27,424,800	20.25	1,333,455	27,129,781	20.35	(20,985)	(295,019)
October	1,091,580	24,826,000	22.74					
November	912,260	23,273,500	25.51					
December	1,002,110	23,912,600	23.86					
January	1,019,240	24,133,400	23.68					
February	885,170	23,021,600	26.01					
March	1,000,060	23,933,100	23.93					
April	952,450	23,568,200	24.74					
May	1,116,620	25,296,500	22.65					
June	1,557,060	29,624,900	19.03					
Total	14,041,240	308,767,900	21.99	4,624,607	88,396,570	19.11	119,917	1,218,470
Subtotals ytd	*4,504,690*	*87,178,100*	*19.35*	*4,624,607*	*88,396,570*	*19.11*	*119,917*	*1,218,470*
Achievement of Budget				*102.66%*	*101.40%*			

** Includes Revenues and Usage from the City of Flint.*

Table 2 - Wholesale Water Collections

Water				
Month	**Current Year**	**Prior Year**	**Variance**	**Ratio**
October	38,336,777	38,886,163	(549,387)	-1.41%
November	27,261,391	28,016,358	(754,966)	-2.69%
December	22,125,972	26,654,068	(4,528,095)	-16.99%
January	32,002,334	23,595,948	8,406,386	35.63%
February	21,352,903	25,840,517	(4,487,613)	-17.37%
March	27,715,696	28,339,011	(623,315)	-2.20%
April	18,489,754	24,583,235	(6,093,480)	-24.79%
May	30,447,581	22,312,189	8,135,392	36.46%
June	21,815,013	24,337,730	(2,522,716)	-10.37%
July	21,988,785	28,138,726	(6,149,941)	-21.86%
August	31,910,077	25,280,453	6,629,623	26.22%
September	26,029,954	26,757,992	(728,038)	-2.72%

GLWA Wholesale Sewer Billings and Collections

Wholesale Sewer Contracts: GLWA provides wholesale sewer service to 18 member-partners via multiple service arrangements.

Service Arrangement Type**

Model Contract	11
Emergency	0
Older Contracts	7
Total	18

*** Note: Services are provided to the Detroit Water & Sewerage Department via a Water and Sewer Services Agreement (WSSA). See the "Retail Revenues, Receivables, and Collections Report" section of the monthly report.*

Wholesale Sewer Billing Basis: Beginning in FY 2015, the "sewer rate simplification" initiative was applied which provides for a stable revenue stream and predictability for our member partners. Wholesale sewer customers are billed a fixed monthly fee based upon the annual revenue requirement.

Table 3 - Wholesale Sewer Billings shows the FY 2019 sewer billed revenue. Consistent with expectations as a result of sewer rate simplification, billed revenue is at 100.00% of budget through September 30, 2018.

Wholesale Sewer Collections: The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

Table 4 - Wholesale Sewer Collections shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. Variability in collections in the current year are associated with timing of the billing cycle.

The shift in wholesale sewer collection patterns is largely attributable to the timing of payments received from one customer. Starting in February 2018, Wayne County's (Rouge Valley, NE Wayne and Wayne County #3) payments were received just after the first of the calendar month for one invoice (showing no collection for the previous month) and the subsequent invoice was paid in the same calendar month. This pattern has continued through September 30, 2018. At no time during this period has Wayne County been over 45 days delinquent in its sewer payments to GLWA. Given the payment amount of $6.8 million, this produces noticeable swings in collection volumes by month.

Table 3 – FY 2019 Wholesale Sewer Billings Report

WHOLESALE SEWER CUSTOMERS						
	FY 2019 - Budget		FY 2019 - Actual		Variance	
Month	Volume	Revenue	Volume	Revenue	Volume	Revenue
	Mcf	*$*	*Mcf*	*$*	*Mcf*	*$*
July	N/A	22,912,800	N/A	22,912,800	N/A	-
August	N/A	22,912,800	N/A	22,912,800	N/A	-
September	N/A	22,912,800	N/A	22,912,800	N/A	-
October	N/A	22,912,800	N/A		N/A	
November	N/A	22,912,800	N/A		N/A	
December	N/A	22,912,800	N/A		N/A	
January	N/A	22,912,800	N/A		N/A	
February	N/A	22,912,800	N/A		N/A	
March	N/A	22,912,800	N/A		N/A	
April	N/A	22,912,800	N/A		N/A	
May	N/A	22,912,800	N/A		N/A	
June	N/A	22,912,800	N/A		N/A	
Total		274,953,600		68,738,400		0
Subtotals ytd		*68,738,400*		*68,738,400*		*0*
Achievement of Budget				*100.00%*		

Table 4 - Wholesale Sewer Collections

Sewer				
Month	**Current Year**	**Prior Year**	**Variance**	**Ratio**
October	21,902,800	19,711,900	2,190,900	11.11%
November	22,662,700	22,693,876	(31,176)	-0.14%
December	23,643,400	23,514,100	129,300	0.55%
January	22,057,972	21,835,338	222,634	1.02%
February	30,280,800	21,659,900	8,620,900	39.80%
March	15,552,000	21,878,700	(6,326,700)	-28.92%
April	27,812,417	22,502,725	5,309,692	23.60%
May	15,342,700	21,620,300	(6,277,600)	-29.04%
June	28,810,500	21,645,500	7,165,000	33.10%
July	16,179,117	22,732,006	(6,552,889)	-28.83%
August	28,384,600	21,949,300	6,435,300	29.32%
September	22,672,400	21,040,913	1,631,487	7.75%

City of Highland Park Billings and Collections

The City of Highland Park is provided water service pursuant to an emergency service basis. Sewer service is provided pursuant to a 1982 amended contract which indicates that the parties are guided in their legal relationship by a Michigan Supreme Court decision from 1949.

As of September 30, 2018, Highland Park had a delinquent balance of $39.9 million, including $31.9 million for wastewater treatment services, $1.6 million for industrial waste control services, and $6.4 million for water supply services.

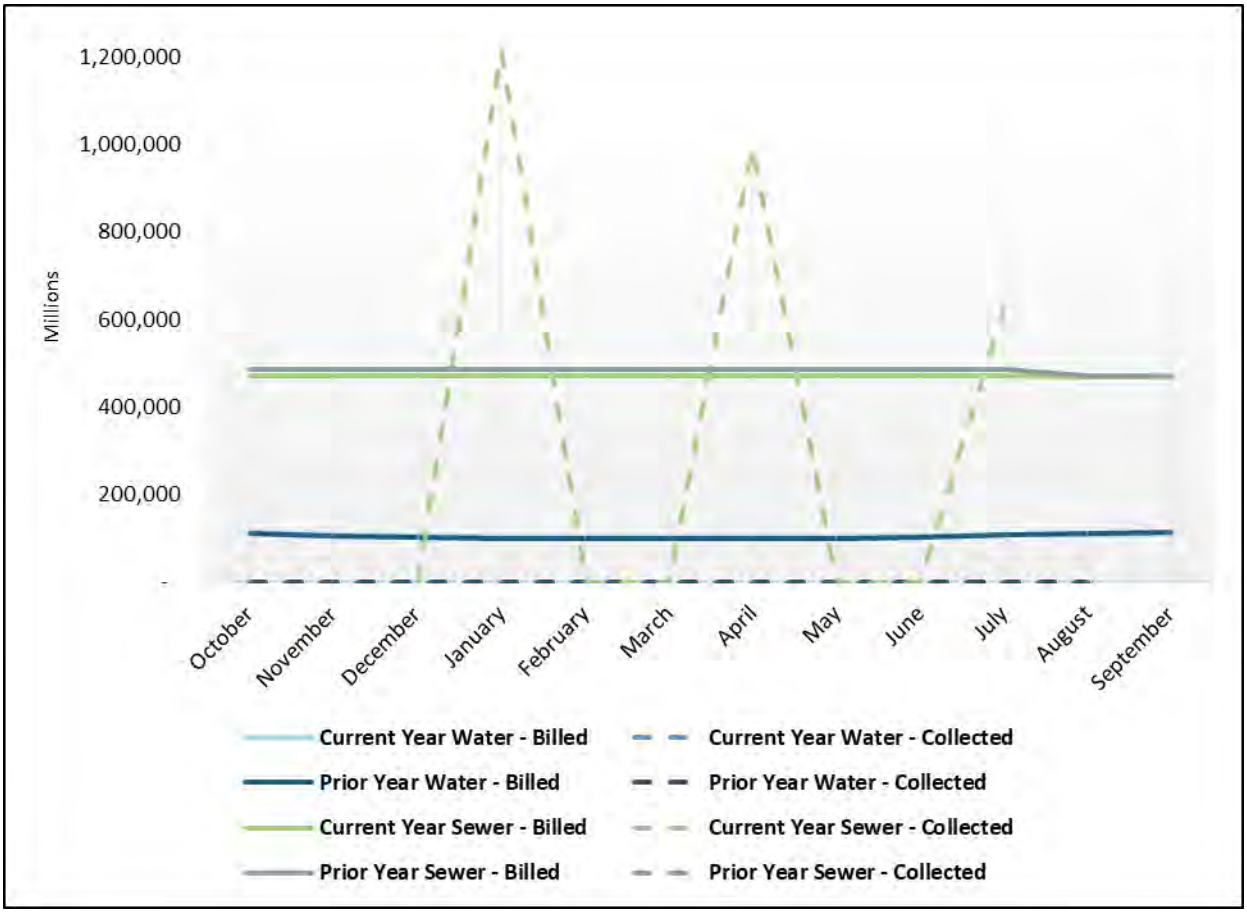
Table 5 - City of Highland Park Billings and Collections Since 2012 provides a life-to-date summary of the billing and collection history for Highland Park from June 30, 2012 to September 30, 2018. Please note the numbers below reflect the month the billing was sent and not the month the service was provided.

Chart 1 - City of Highland Park Billings and Collections – Past Twelve Months is provided to depict Highland Park's most current performance specific to Water and Sewer. Payments received-to-date are applied to Sewer at this time.

Table 5 - City of Highland Park Billings and Collections Since 2012

	Water	Sewer	IWC	Cumulative Total
June 30, 2012 Balance	$ -	$ 10,207,956	$ 852,987	$ 11,060,943
FY 2013 Billings	485,887	4,987,635	154,444	5,627,966
FY 2013 Payments	(65,652)	(2,206,211)	-	(2,271,863)
June 30, 2013 Balance	$ 420,235	$ 12,989,380	$ 1,007,431	$ 14,417,046
FY 2014 Billings	1,004,357	6,980,442	161,951	8,146,750
FY 2014 Payments	-	(1,612,633)	-	(1,612,633)
June 30, 2014 Balance	$ 1,424,592	$ 18,357,189	$ 1,169,382	$ 20,951,163
FY 2015 Billings	1,008,032	5,553,123	165,739	6,726,894
FY 2015 Payments	-	(1,444,623)	-	(1,444,623)
June 30, 2015 Balance	$ 2,432,625	$ 22,465,689	$ 1,335,121	$ 26,233,435
FY 2016 Billings	1,157,178	5,612,167	106,431	6,875,776
FY 2016 Payments	-	(2,022,335)	-	(2,022,335)
June 30, 2016 Balance	$ 3,589,803	$ 26,055,521	$ 1,441,551	$ 31,086,875
FY 2017 Billings	1,245,267	5,802,000	101,999	7,149,265
FY 2017 Payments	-	(2,309,186)	-	(2,309,186)
June 30, 2017 Balance	$ 4,835,070	$ 29,548,335	$ 1,543,550	$ 35,926,954
FY 2018 Billings (12 Months)	1,277,179	5,657,101	80,472	7,014,752
FY 2018 Payments (12 Months)	-	(4,108,108)	-	(4,108,108)
June 30, 2018 Balance	$ 6,112,248	$ 31,097,327	$ 1,624,022	$ 38,833,597
FY 2019 Billings (3 Months)	327,999	1,406,000	15,248	1,749,247
FY 2019 Payments (3 Months)	-	(629,017)	-	(629,017)
Balance as of September 30, 2018	**$ 6,440,247**	**$ 31,874,310**	**$ 1,639,270**	**$ 39,953,828**

Chart 1 - City of Highland Park Water & Sewer Billings and Collections – Past Twelve Months



Note: Current and prior year water billing amounts are very close so the two lines are nearly overlapping when reviewed at this high-level.

Water & Sewer System Wholesale Accounts Receivable Aging Report

The detailed accounts receivable aging is in the Appendix to this monthly report. This report reflects the wholesale receivables only and does not include DWSD. (Note: percentages vary from 100% due to rounding.)

Table 6 - ***Wholesale Accounts Receivable Aging Report Summary*** is a summary of the total, current and non-current receivables by category as of September 30, 2018.

Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park is the same summary *without* the past due balances for the City of Highland Park.

Table 8 - Wholesale Accounts Receivable Aging Report, Net of Highland Park and WTUA is a summary *without* the past due balances for the City of Highland Park and net of pending credits for certain Western Township Utilities Authority (WTUA). Credits for billed services are pending receipt of a final agreement from Wayne County to effectuate a transfer retroactive to July 1, 2018.

Table 6 - Wholesale Accounts Receivable Aging Report Summary

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	$ 19,165,181.72	$ 12,000,633.23	$ 1,052,300.53	$ 105,948.31	$ 6,006,299.65
Sewer	$ 47,342,410.28	$ 15,935,999.50	$ 467,900.00	$ 470,200.00	$ 30,468,310.78
IWC	$ 2,979,096.05	$ 651,145.44	$ -	$ 64,862.76	$ 2,263,087.85
Pollutant Surcharge	$ 1,304,852.26	$ 748,139.25	$ 212,472.01	$ 40,569.12	$ 303,671.88
Total	$ 70,791,540.31	$ 29,335,917.42	$ 1,732,672.54	$ 681,580.19	$ 39,041,370.16
	100.00%	41.44%	2.45%	0.96%	55.15%

Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	$ 12,834,714.83	$ 11,891,981.83	$ 942,733.00	$ -	$ -
Sewer	$ 15,468,099.50	$ 15,468,099.50	$ -	$ -	$ -
IWC	$ 1,339,825.83	$ 642,651.27	$ -	$ 58,109.24	$ 639,065.32
Pollutant Surcharge	$ 1,304,852.26	$ 748,139.25	$ 212,472.01	$ 40,569.12	$ 303,671.88
Total	$ 30,947,492.42	$ 28,750,871.85	$ 1,155,205.01	$ 98,678.36	$ 942,737.20
	100.00%	92.90%	3.73%	0.32%	3.05%

Table 8 - Wholesale Accounts Receivable Aging Report, Net of Highland Park and WTUA

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	$ 12,834,714.83	$ 11,891,981.83	$ 942,733.00	$ -	$ -
Sewer	$ 15,468,099.50	$ 15,468,099.50	$ -	$ -	$ -
IWC	$ 569,907.75	$ 569,907.75	$ -	$ -	$ -
Pollutant Surcharge	$ 1,304,852.26	$ 748,139.25	$ 212,472.01	$ 40,569.12	$ 303,671.88
Total	$ 30,177,574.34	$ 28,678,128.33	$ 1,155,205.01	$ 40,569.12	$ 303,671.88
	100.00%	95.03%	3.83%	0.13%	1.01%

Retail Revenues, Receivables, and Collections: Pursuant to the terms of the lease agreement between the City of Detroit and the Great Lakes Water Authority (GLWA), the Detroit Water & Sewerage Department (DWSD) serves as GLWA's agent for billing activities for the City of Detroit retail customer class. All water and sewer service collections from DWSD customers are deposited in a trust account and are administered in accordance with the GLWA Master Bond Ordinance.

The Monthly Retail Revenues, Receivables, & Collections Report includes the following.

1. FY 2019 DWSD Retail Water Revenue Billings and Collections
2. FY 2019 DWSD Retail Sewer Revenue Billings and Collections
3. DWSD Retail Water & Sewer System Accounts Receivable Aging Report

Note: Wholesale customer revenues are billed by the Great Lakes Water Authority.

DWSD Retail Water Billings and Collections

Retail Billing Basis: DWSD bills retail customers monthly. Customers are billed throughout the month in cycles based on a meter reading schedule beginning with residential accounts and ending with commercial and industrial customers.

> ***Table 1 - DWSD Retail Billings*** shows the FY 2019 water usage and billed revenue which are provided by DWSD staff. As of September 30, 2018, the DWSD usage was at 101.48% of the budget and billed revenue was at 109.40% of budget.

DWSD Retail Water Collections: The collections represent payments made by DWSD retail customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

> ***Table 2 - Retail Water Collections*** shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods.

Table 1 – DWSD Retail Water Billings

RETAIL WATER CUSTOMERS								
	FY 2019 - Budget			FY 2019 - Actual			Variance	
Month	Volume	Revenue	Unit Revenue	Volume	Revenue (1)	Unit Revenue	Volume	Revenue
	Mcf	*$*	*$/Mcf*	*Mcf*	*$*	*$/Mcf*	*Mcf*	*$*
July	269,000	9,424,500	35.04	300,613	10,203,409	33.94	31,613	778,909
August	273,100	9,377,700	34.34	302,476	9,833,149	32.09	29,376	455,449
September	270,500	8,494,300	31.40	221,531	9,824,571	44.35	(48,969)	1,330,271
October	233,800	8,165,900	34.93					
November	224,500	7,750,100	34.52					
December	206,500	8,224,900	39.83					
January	226,600	7,978,800	35.21					
February	216,400	7,980,200	36.88					
March	213,300	8,163,900	38.27					
April	223,100	7,856,900	35.22					
May	211,000	9,109,200	43.17					
June	240,200	9,063,600	37.73			-		
Total	2,808,000	101,590,000	36.18	824,620	29,861,129	36.21	12,020	2,564,629
Subtotals ytd	*812,600*	*27,296,500*	*33.59*	*824,620*	*29,861,129*	*36.21*	*12,020*	*2,564,629*
Achievement of Budget				*101.48%*	*109.40%*			

(1) Retail Revenues include Miscellaneous Revenues and Penalties

Table 2 – DWSD Retail Water Collections

Water				
Month	**Current Year**	**Prior Year**	**Variance**	**Ratio**
October	9,528,528	9,394,260	134,268	1.43%
November	8,049,328	9,433,934	(1,384,606)	-14.68%
December	8,265,636	8,571,649	(306,013)	-3.57%
January	8,066,448	6,744,162	1,322,286	19.61%
February	6,432,245	7,682,509	(1,250,265)	-16.27%
March	8,280,635	8,218,506	62,129	0.76%
April	9,226,675	6,977,199	2,249,477	32.24%
May	8,969,019	8,568,632	400,387	4.67%
June	7,458,069	7,141,568	316,501	4.43%
July	7,442,308	8,357,505	(915,197)	-10.95%
August	8,692,784	9,509,488	(816,704)	-8.59%
September	9,766,449	8,949,906	816,543	9.12%

DWSD Retail Sewer Billings and Collections

Retail billing basis: DWSD bills retail customers monthly. Customers are billed throughout the month in cycles based on a meter reading schedule beginning with residential accounts and ending with commercial and industrial customers.

Table 3 - DWSD Retail Sewer Billings shows the FY 2019 sewer billed revenue which are provided by DWSD staff. As of September 30, 2018, the DWSD usage was at 104.43% of the budget and billed revenue was at 102.75% of budget.

DWSD Retail Sewer Collections: The collections represent payments made by DWSD retail customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

Table 4 – DWSD Retail Sewer Collections shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods.

Table 3 - DWSD Retail Sewer Billings

RETAIL SEWER CUSTOMERS

	FY 2019 - Budget		FY 2019 - Actual		Variance	
Month	Volume	Revenue	Volume	Revenue	Volume	Revenue
	Mcf	*$*	*Mcf*	*$*	*Mcf*	*$*
July	242,100	27,423,400	273,862	27,711,606	31,762	288,206
August	244,200	27,232,200	262,525	27,263,163	18,325	30,963
September	239,600	25,367,500	221,660	27,251,139	(17,940)	1,883,639
October	211,000	25,177,200				
November	197,600	23,861,000				
December	182,400	25,293,500				
January	198,600	24,852,800				
February	191,600	25,329,400				
March	191,000	25,474,500				
April	197,300	24,789,700				
May	187,300	26,205,200				
June	210,300	26,730,700				
Total	2,493,000	307,737,100	758,047	82,225,908	32,147	2,202,808
Subtotals ytd	*725,900*	*80,023,100*	*758,047*	*82,225,908*	*32,147*	*2,202,808*
Achievement of Budget			*104.43%*	*102.75%*		

(1) Retail Revenues include Miscellaneous Revenues and Penalties

Table 4 – DWSD Retail Sewer Collections

Sewer				
Month	**Current Year**	**Prior Year**	**Variance**	**Ratio**
October	23,786,903	24,154,529	(367,626)	-1.52%
November	19,485,270	20,175,379	(690,109)	-3.42%
December	19,522,952	19,500,639	22,313	0.11%
January	18,308,458	16,792,983	1,515,475	9.02%
February	17,495,563	18,149,650	(654,087)	-3.60%
March	23,015,525	18,711,974	4,303,552	23.00%
April	16,159,844	17,219,106	(1,059,262)	-6.15%
May	18,341,298	20,046,357	(1,705,059)	-8.51%
June	21,721,155	18,005,548	3,715,607	20.64%
July	22,275,363	18,582,964	3,692,399	19.87%
August	21,746,714	24,263,141	(2,516,427)	-10.37%
September	23,727,505	21,320,358	2,407,147	11.29%

DWSD Retail Water and Sewer Accounts Receivable Aging Report

The DWSD detailed accounts receivable aging is categorized by customer category.

Table 5 is a summary of the total, current and non-current Water and Sewer receivables by category as of September 30, 2018. This now includes pre-bifurcation receivables transferred to DWSD as part of the April 2018 Memorandum of Understanding.

Table 5 – DWSD Retail Accounts Receivable Aging Report – Water & Sewer Combined

Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	TOTAL A/R BALANCE
RESIDENTIAL	284,395	$ 315.91	$ 14,659,511	$ 7,631,842	$ 13,605,340	$ 53,947,024	$ 89,843,717
			16.3%	*8.5%*	*15.1%*	*60.0%*	*100.0%*
COMMERCIAL	27,657	1,196.27	13,124,366	3,204,312	5,233,253	11,523,256	33,085,188
			39.7%	*9.7%*	*15.8%*	*34.8%*	*100.0%*
INDUSTRIAL	4,650	2,796.29	3,753,749	1,658,485	1,981,265	5,609,254	13,002,753
			28.9%	*12.8%*	*15.2%*	*43.1%*	*100.0%*
TAX EXEMPT ENTITIES	6,825	1,300.63	2,809,637	1,247,595	980,890	3,838,694	8,876,816
			31.7%	*14.1%*	*11.1%*	*43.2%*	*100.0%*
GOVERNMENT ENTITIES	7,724	1,337.51	1,469,420	845,303	3,037,405	4,978,776	10,330,904
			14.2%	*8.2%*	*29.4%*	*48.2%*	*100.0%*
SUBTOTAL- ACTIVE ACCOUNTS	**331,251**	**$ 468.34**	**$ 35,816,683**	**$ 14,587,538**	**$ 24,838,153**	**$ 79,897,004**	**$ 155,139,378**
			23.1%	*9.4%*	*16.0%*	*51.5%*	*100.0%*
INACTIVE ACCOUNTS	250,434	42.76	96,825	154,861	595,074	9,861,155	10,707,916
			0.9%	*1.4%*	*5.6%*	*92.1%*	*100.0%*
Total	**581,685**	**$ 285.12**	**$ 35,913,508**	**$ 14,742,399**	**$ 25,433,227**	**$ 89,758,160**	**$ 165,847,294**
% of Total A/R			*21.7%*	*8.9%*	*15.3%*	*54.1%*	*100.0%*
Water	214,402	171.13	$ 8,841,224	$ 3,395,836	$ 4,589,135	$ 19,864,162	$ 36,690,357
Sewer	278,129	464.38	$ 27,072,284	$ 11,346,563	$ 20,844,092	$ 69,893,998	$ 129,156,937
Total	581,685	285.12	$ 35,913,508	$ 14,742,399	$ 25,433,227	$ 89,758,160	$ 165,847,294

The Monthly Trust Receipts & Disbursements Report includes the following.

1. GLWA Trust Receipts & Disbursements – Net Cash Flows and Receipts
2. DWSD Trust Receipts & Disbursements – Net Cash Flows and Receipts
3. Combined System Trust Receipts & Disbursements – Net Cash Flows

GLWA Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department) activities which are further separated by the water system and the sewage disposal system.

This report provides an ongoing status of the net cash flow of both organizations (GLWA and DWSD) to fund their allocated share of Master Bond Ordinance requirements in accordance with the leases for the regional systems. This report begins with the operational effective date of the GLWA on January 1, 2016.

Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for GLWA since inception at January 1, 2016. Fiscal year 2019 reflects only three months of activity to date.

Through September 30, 2018 the water fund cash receipts exceeded MBO disbursements by 18% with a ratio of 12% since January 1, 2016. Through September 30, 2018, the sewer fund cash receipts exceeded MBO disbursements by 5% and by a ratio of 3% since January 1, 2016.

Chart 1 – GLWA 12-Month Net Receipts – Water outlines monthly cash receipt trends across two points of reference for the regional water system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

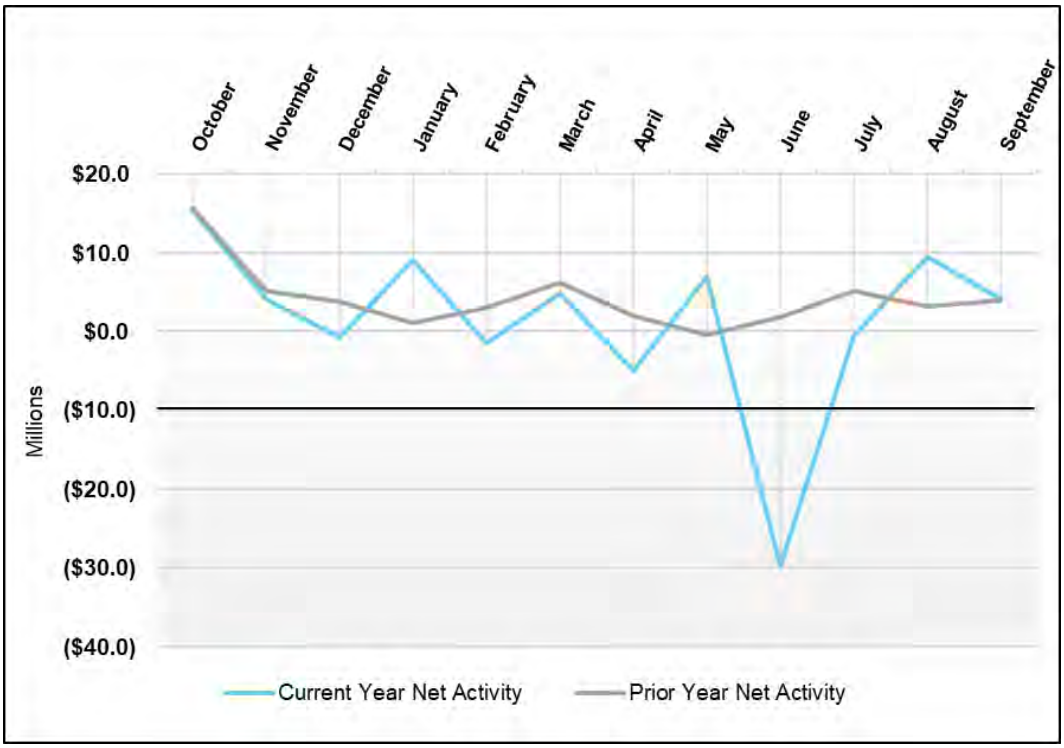
Chart 2 – GLWA 12-Month Net Receipts – Sewer outlines monthly cash receipt trends across two points of reference for the regional sewer system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements

		FY 2016	FY 2017	FY 2018	FY 2019-to-Date	Life-to-Date Total
	Water					
1	Receipts	$ 149,624,282	352,432,096	337,488,663	86,592,085	926,137,126
2	MOU Adjustments	-	-	-		-
3	Adjusted Receipts	149,624,282	352,432,096	337,488,663	86,592,085	926,137,126
4	Disbursements	146,191,756	288,268,172	321,841,171	73,452,402	829,753,501
5	Net Receipts	$ 3,432,526	64,163,924	15,647,492	13,139,683	96,383,625
6	*Ratio of Receipts to Disbursements*	*102%*	*122%*	*105%*	*118%*	*112%*
	Sewer					
7	Receipts	$ 232,310,973	469,205,156	474,946,332	119,294,101	1,295,756,562
8	MOU Adjustments	-	-	-		-
9	Adjusted Receipts	232,310,973	469,205,156	474,946,332	119,294,101	1,295,756,562
10	Disbursements	219,471,583	440,859,613	480,278,006	113,546,506	1,254,155,708
11	Net Receipts	$ 12,839,390	28,345,543	(5,331,674)	5,747,595	41,600,854
12	*Ratio of Receipts to Disbursements*	*106%*	*106%*	*99%*	*105%*	*103%*
	Combined					
13	Receipts	$ 381,935,255	821,637,252	812,434,995	205,886,186	2,221,893,688
14	MOU Adjustments	-	-	-	-	-
15	Adjusted Receipts	381,935,255	821,637,252	812,434,995	205,886,186	2,221,893,688
16	Disbursements	365,663,339	729,127,785	802,119,177	186,998,908	2,083,909,209
17	Net Receipts	$ 16,271,916	92,509,467	10,315,818	18,887,278	137,984,479
18	*Ratio of Receipts to Disbursements*	*104%*	*113%*	*101%*	*110%*	*107%*

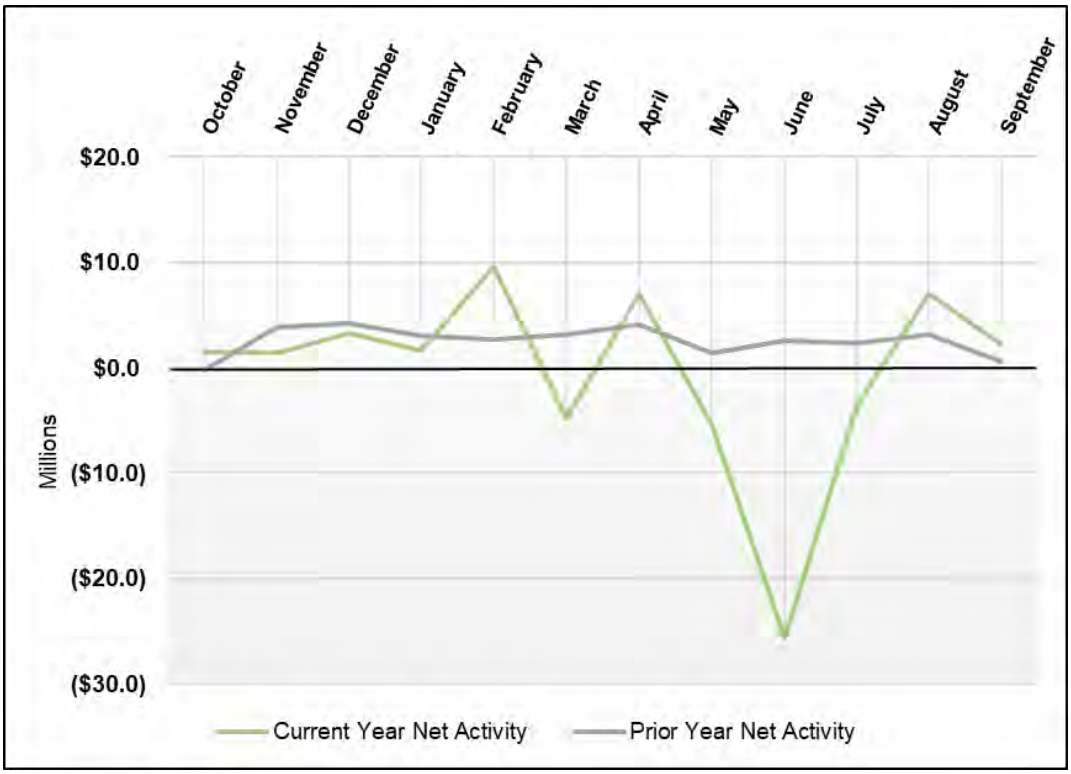
MOU Adjustments applies to DWSD and is shown here for consistency.

Chart 1 – GLWA 12-Month Net Receipts - Water



Note: *June 2018 net activity reflects a year-end improvement and extension fund transfer.*

Chart 2 – GLWA 12-Month Net Receipts – Sewer



Note: *June 2018 net activity reflects a year-end improvement and extension fund transfer.*

DWSD Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department) activities which are further separated by the water system and the sewage disposal system.

This report provides an ongoing status of the net cash flow of both organizations (GLWA and DWSD) to fund their allocated share of Master Bond Ordinance requirements in accordance with the leases for the regional systems. This report begins with the operational effective date of the GLWA on January 1, 2016.

Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for DWSD since inception at January 1, 2016. Fiscal year 2019 reflects only three months of activity to date.

Through September 30, 2018 the local water fund cash receipts exceeded MBO disbursements by 6% with a historical ratio of cash receipts exceeding MBO disbursements at 4% since January 1, 2016.

Through September 30, 2018, the local sewer fund cash receipts fell short of MBO disbursements by -4% with a historic shortfall of -8% since January 1, 2016. DWSD has proposed a long-term plan to address this structural shortfall. The Reconciliation Committee also monitors this balance as part of its quarterly meetings.

Chart 3 – DWSD 12-Month Net Receipts – Water outlines monthly activity trends across two points of reference for the local water system—current year and prior year. The black line at the zero highlights the breakeven goal for net receipts.

Chart 4 – DWSD 12-Month Net Receipts – Sewer outlines monthly activity trends across two points of reference for the local sewer system—current year and prior year. The black line at the zero highlights the breakeven goal for net receipts.

Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements

		FY 2016	FY 2017	FY 2018	FY 2019-to-Date	Life-to-Date Total
	Water					
1	Receipts	$ 26,201,881	96,451,105	101,233,147	26,905,525	250,791,658
2	MOU Adjustments	18,446,100	-	-	-	18,446,100
3	Adjusted Receipts	44,647,981	96,451,105	101,233,147	26,905,525	269,237,758
4	Disbursements	47,809,552	93,066,144	93,049,457	25,410,975	259,336,128
5	Net Receipts	$ (3,161,571)	3,384,961	8,183,690	1,494,550	9,901,630
6	*Ratio of Receipts to Disbursements*	*93%*	*104%*	*109%*	*106%*	*104%*
	Sewer					
7	Receipts	$ 65,256,734	233,723,367	242,104,791	69,051,772	610,136,664
8	MOU Adjustments	55,755,100	-	-	-	55,755,100
9	Adjusted Receipts	121,011,834	233,723,367	242,104,791	69,051,772	665,891,764
10	Disbursements	122,297,300	261,963,973	266,217,825	71,936,861	722,415,959
11	Net Receipts	$ (1,285,466)	(28,240,606)	(24,113,034)	(2,885,089)	(56,524,195)
12	*Ratio of Receipts to Disbursements*	*99%*	*89%*	*91%*	*96%*	*92%*
	Combined					
13	Receipts	$ 91,458,615	330,174,472	343,337,938	95,957,297	860,928,322
14	MOU Adjustments	74,201,200	-	-	-	74,201,200
15	Adjusted Receipts	165,659,815	330,174,472	343,337,938	95,957,297	935,129,522
16	Disbursements	170,106,852	355,030,117	359,267,282	97,347,836	981,752,087
17	Net Receipts	$ (4,447,037)	(24,855,645)	(15,929,344)	(1,390,539)	(46,622,565)
18	*Ratio of Receipts to Disbursements*	*97%*	*93%*	*96%*	*99%*	*95%*

Note: *The $29,300,000 for the DWSD loan receivable balance is calculated as follows.*

(1,285,466)	FY 2016 Shortfall
(28,240,606)	FY 2017 Shortfall
(29,526,072)	Subtotal
238,264	June IWC not due until July
(29,287,808)	FY 2017 Shortfall-to-Date
(29,300,000)	**FY 2017 Shortfall-to-Date, Rounded**

Chart 3 – DWSD 12-Month Net Receipts - Water

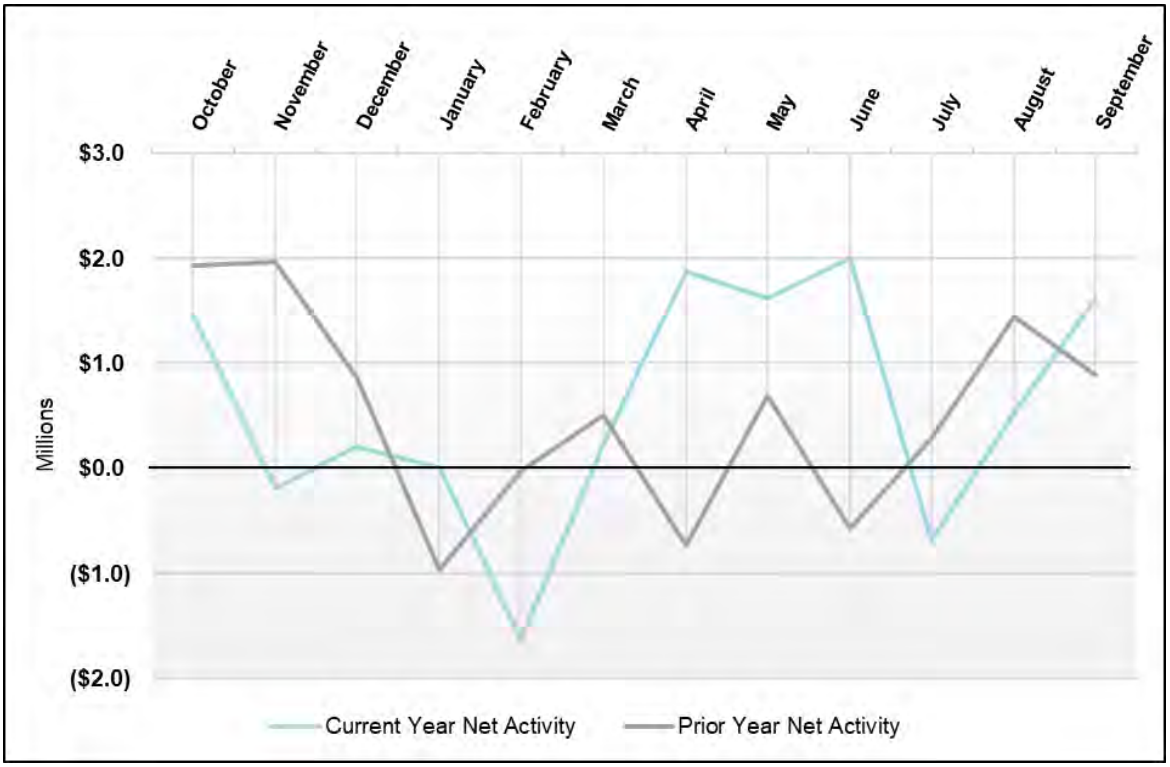
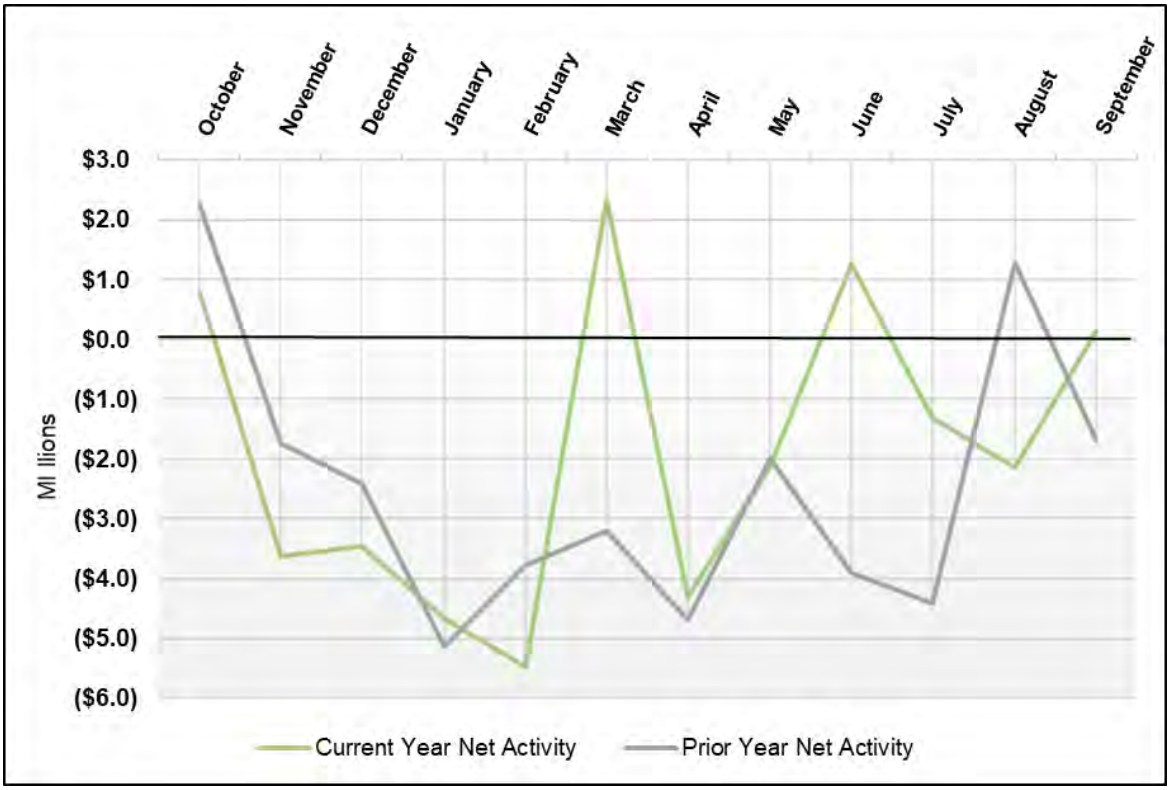


Chart 4 – DWSD 12-Month Net Receipts - Sewer



Combined System Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department) activities which are further separated by the water system and the sewage disposal system.

Table 3 – Combined Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for GLWA since inception at January 1, 2016. Fiscal year 2019 reflects only three months of activity to date.

Through September 30, 2018 the combined water system cash receipts exceeded MBO disbursements by 15% with a ratio of 10% since January 1, 2016. Through September 30, 2018, the combined sewer system cash receipts exceeded MBO disbursements by 2% and fell short slightly by a ratio of -1% since January 1, 2016.

Table 3 – Combined Net Cash Flows from Trust Receipts & Disbursements

		FY 2016	FY 2017	FY 2018	FY 2019-to-Date	Life-to-Date Total
	Water					
1	Receipts	$ 175,826,163	$ 448,883,201	$ 438,721,810	$ 113,497,610	1,176,928,784
2	MOU Adjustments	$ 18,446,100	$ -	$ -	$ -	18,446,100
3	Adjusted Receipts	194,272,263	448,883,201	438,721,810	113,497,610	1,195,374,884
4	Disbursements	194,001,308	381,334,316	414,890,628	98,863,377	1,089,089,629
5	Net Receipts	$ 270,955	67,548,885	23,831,182	14,634,233	106,285,255
6	*Ratio of Receipts to Disbursements*	*100%*	*118%*	*106%*	*115%*	*110%*
	Sewer					
7	Receipts	$ 297,567,707	$ 702,928,523	$ 717,051,123	$ 188,345,873	1,905,893,226
8	MOU Adjustments	$ 55,755,100	$ -	$ -	$ -	55,755,100
9	Adjusted Receipts	353,322,807	702,928,523	717,051,123	188,345,873	1,961,648,326
10	Disbursements	341,768,883	702,823,586	746,495,831	185,483,367	1,976,571,667
11	Net Receipts	$ 11,553,924	$ 104,937	$ (29,444,708)	$ 2,862,506	(14,923,341)
12	*Ratio of Receipts to Disbursements*	*103%*	*100%*	*96%*	*102%*	*99%*
	Combined					
13	Receipts	$ 473,393,870	$ 1,151,811,724	$ 1,155,772,933	$ 301,843,483	3,082,822,010
14	MOU Adjustments	$ 74,201,200	$ -	$ -	$ -	74,201,200
15	Adjusted Receipts	547,595,070	1,151,811,724	1,155,772,933	301,843,483	3,157,023,210
16	Disbursements	535,770,191	1,084,157,902	1,161,386,459	284,346,744	3,065,661,296
17	Net Receipts	$ 11,824,879	$ 67,653,822	$ (5,613,526)	$ 17,496,739	91,361,914
18	*Ratio of Receipts to Disbursements*	*102%*	*106%*	*100%*	*106%*	*103%*

APPENDIX

GLWA Aged Accounts Receivable- WATER

Balances as of 09/30/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	$220,330.25	$220,330.25	$0.00	$0.00	$0.00
ASH TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
BELLEVILLE	$0.00	$0.00	$0.00	$0.00	$0.00
BERLIN TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
BROWNSTOWN TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
BRUCE TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
BURTCHVILLE TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
CANTON TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
CENTER LINE	$0.00	$0.00	$0.00	$0.00	$0.00
CHESTERFIELD TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
FLINT	$168,919.59	$168,919.59	$0.00	$0.00	$0.00
CLINTON TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
COMMERCE TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
DEARBORN	$1,823,570.62	$908,313.15	$915,257.47	$0.00	$0.00
DEARBORN HEIGHTS	$0.00	$0.00	$0.00	$0.00	$0.00
EASTPOINTE	$133,445.34	$133,445.34	$0.00	$0.00	$0.00
ECORSE	$0.00	$0.00	$0.00	$0.00	$0.00
FARMINGTON	$0.00	$0.00	$0.00	$0.00	$0.00
FARMINGTON HILLS	$0.00	$0.00	$0.00	$0.00	$0.00
FERNDALE	$89,209.86	$89,209.86	$0.00	$0.00	$0.00
FLAT ROCK	$0.00	$0.00	$0.00	$0.00	$0.00
FRASER	$0.00	$0.00	$0.00	$0.00	$0.00
GARDEN CITY	$156,878.70	$156,878.70	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- WATER

Balances as of 09/30/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GENESEE COUNTY DRAIN COMM	$0.00	$0.00	$0.00	$0.00	$0.00
GIBRALTAR	$0.00	$0.00	$0.00	$0.00	$0.00
GREATER LAPEER CUA	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE ILE TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE PARK	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE SHORES	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE WOODS	$0.00	$0.00	$0.00	$0.00	$0.00
HAMTRAMCK	$61,653.19	$61,653.19	$0.00	$0.00	$0.00
HARPER WOODS	$0.00	$0.00	$0.00	$0.00	$0.00
HARRISON TWP	$0.00	$0.00	$0.00	$0.00	$0.00
HAZEL PARK	$62,265.22	$62,265.22	$0.00	$0.00	$0.00
HIGHLAND PARK	$6,330,466.89	$108,651.40	$109,567.53	$105,948.31	$6,006,299.65
HURON TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
IMLAY CITY	$0.00	$0.00	$0.00	$0.00	$0.00
IMLAY TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
INKSTER	$0.00	$0.00	$0.00	$0.00	$0.00
KEEGO HARBOR	$0.00	$0.00	$0.00	$0.00	$0.00
LAPEER	$130,240.26	$130,240.26	$0.00	$0.00	$0.00
LENOX TOWNSHIP	$(18,749.06)	$(18,749.06)	$0.00	$0.00	$0.00
LINCOLN PARK	$210,984.95	$210,984.95	$0.00	$0.00	$0.00
LIVONIA	$1,543,640.97	$1,543,640.97	$0.00	$0.00	$0.00
MACOMB TWP	$0.00	$0.00	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- WATER

Balances as of 09/30/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MADISON HEIGHTS	$0.00	$0.00	$0.00	$0.00	$0.00
MAYFIELD TOWNSHIP	$5,616.29	$5,616.29	$0.00	$0.00	$0.00
MELVINDALE	$0.00	$0.00	$0.00	$0.00	$0.00
NEW HAVEN	$0.00	$0.00	$0.00	$0.00	$0.00
NOCWA	$0.00	$0.00	$0.00	$0.00	$0.00
NORTHVILLE	$76,398.99	$76,398.99	$0.00	$0.00	$0.00
NORTHVILLE TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
NOVI	$0.00	$0.00	$0.00	$0.00	$0.00
OAK PARK	$111,197.96	$111,197.96	$0.00	$0.00	$0.00
OAKLAND CO DR COM	$0.00	$0.00	$0.00	$0.00	$0.00
PLYMOUTH	$0.00	$0.00	$0.00	$0.00	$0.00
PLYMOUTH TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
REDFORD TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
RIVER ROUGE	$0.00	$0.00	$0.00	$0.00	$0.00
RIVERVIEW	$0.00	$0.00	$0.00	$0.00	$0.00
ROCKWOOD	$30,022.32	$30,022.32	$0.00	$0.00	$0.00
ROMEO	$0.99	$0.99	$0.00	$0.00	$0.00
ROMULUS	$0.00	$0.00	$0.00	$0.00	$0.00
ROSEVILLE	$238,669.31	$238,669.31	$0.00	$0.00	$0.00
ROYAL OAK TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
SOCWA	$2,475,888.83	$2,475,888.83	$0.00	$0.00	$0.00
SHELBY TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
SOUTH ROCKWOOD	$0.00	$0.00	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- WATER

Balances as of 09/30/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHGATE	$0.00	$0.00	$0.00	$0.00	$0.00
GREENWOOD TOWNSHIP	$67,733.21	$67,733.21	$0.00	$0.00	$0.00
ST. CLAIR SHORES	$0.00	$0.00	$0.00	$0.00	$0.00
STERLING HEIGHTS	$1,550,916.10	$1,550,916.10	$0.00	$0.00	$0.00
SUMPTER TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
SYLVAN LAKE	$23,304.93	$23,304.93	$0.00	$0.00	$0.00
TAYLOR	$0.00	$0.00	$0.00	$0.00	$0.00
TRENTON	$0.00	$0.00	$0.00	$0.00	$0.00
TROY (SEOC)	$0.00	$0.00	$0.00	$0.00	$0.00
UTICA	$0.00	$0.00	$0.00	$0.00	$0.00
VAN BUREN TOWNSHIP	$377,630.98	$350,155.45	$27,475.53	$0.00	$0.00
VILLAGE OF ALMONT	$0.00	$0.00	$0.00	$0.00	$0.00
WALLED LAKE	$0.00	$0.00	$0.00	$0.00	$0.00
WARREN	$0.00	$0.00	$0.00	$0.00	$0.00
WASHINGTON TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
WAYNE	$261,232.20	$261,232.20	$0.00	$0.00	$0.00
WEST BLOOMFIELD TWP (C-O)	$1,215,374.96	$1,215,374.96	$0.00	$0.00	$0.00
WESTLAND	$626,195.38	$626,195.38	$0.00	$0.00	$0.00
WIXOM	$0.00	$0.00	$0.00	$0.00	$0.00
WOODHAVEN	$165,229.11	$165,229.11	$0.00	$0.00	$0.00
YCUA	$1,026,913.38	$1,026,913.38	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- WATER

Balances as of 09/30/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
TOTAL WATER	$19,165,181.72	$12,000,633.23	$1,052,300.53	$105,948.31	$6,006,299.65

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	$70,600.00	$70,600.00	$0.00	$0.00	$0.00
CENTER LINE	$85,599.50	$85,599.50	$0.00	$0.00	$0.00
DEARBORN	$1,614,400.00	$1,614,400.00	$0.00	$0.00	$0.00
EVERGREEN-FARMINGTON	$2,881,500.00	$2,881,500.00	$0.00	$0.00	$0.00
FARMINGTON	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE FARMS	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE PARK	$150,100.00	$150,100.00	$0.00	$0.00	$0.00
HAMTRAMCK	$330,200.00	$330,200.00	$0.00	$0.00	$0.00
HARPER WOODS	$0.00	$0.00	$0.00	$0.00	$0.00
HIGHLAND PARK	$31,874,310.78	$467,900.00	$467,900.00	$470,200.00	$30,468,310.78
MELVINDALE	$126,900.00	$126,900.00	$0.00	$0.00	$0.00
OAKLAND COUNTY GWK DD	$3,747,700.00	$3,747,700.00	$0.00	$0.00	$0.00
OMID	$6,461,100.00	$6,461,100.00	$0.00	$0.00	$0.00
REDFORD TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
ROUGE VALLEY	$0.00	$0.00	$0.00	$0.00	$0.00
WAYNE COUNTY N.E.	$0.00	$0.00	$0.00	$0.00	$0.00
WAYNE COUNTY-AREA #3	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL SEWER ACCOUNTS	**$47,342,410.28**	**$15,935,999.50**	**$467,900.00**	**$470,200.00**	**$30,468,310.78**

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	$(963.53)	$(963.53)	$0.00	$0.00	$0.00
AUBURN HILLS (C-O)	$0.00	$0.00	$0.00	$0.00	$0.00
AUBURN HILLS (E-F)	$0.00	$0.00	$0.00	$0.00	$0.00
BERKLEY	$2,901.33	$2,901.33	$0.00	$0.00	$0.00
BEVERLY HILLS	$999.14	$999.14	$0.00	$0.00	$0.00
BINGHAM FARMS	$0.00	$0.00	$0.00	$0.00	$0.00
BIRMINGHAM (E-F)	$2,373.14	$2,373.14	$0.00	$0.00	$0.00
BIRMINGHAM (SEOC)	$11,177.44	$11,177.44	$0.00	$0.00	$0.00
BLOOMFIELD HILLS	$0.00	$0.00	$0.00	$0.00	$0.00
BLOOMFIELD TOWNSHIP	$7,260.69	$7,260.69	$0.00	$0.00	$0.00
CANTON TOWNSHIP	$403,538.68	$38,132.92	$0.00	$30,461.84	$334,943.92
CENTER LINE	$3,683.10	$3,683.10	$0.00	$0.00	$0.00
CHESTERFIELD TOWNSHIP	$12,173.80	$12,173.80	$0.00	$0.00	$0.00
CITY OF FARMINGTON (E-F)	$279.12	$279.12	$0.00	$0.00	$0.00
CITY OF ROCHESTER	$7,450.46	$7,450.46	$0.00	$0.00	$0.00
CLARKSTON	$307.71	$307.71	$0.00	$0.00	$0.00
CLAWSON	$0.00	$0.00	$0.00	$0.00	$0.00
CLINTON TOWNSHIP	$25,381.89	$25,381.89	$0.00	$0.00	$0.00
DEARBORN	$73,266.78	$73,266.78	$0.00	$0.00	$0.00
DEARBORN HEIGHTS	$9,402.44	$9,402.44	$0.00	$0.00	$0.00
DETROIT METRO WC AIRPORT	$106.64	$106.64	$0.00	$0.00	$0.00
EASTPOINTE	$12,742.17	$12,742.17	$0.00	$0.00	$0.00
FARMINGTON	$2,886.83	$2,886.83	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON HILLS	$0.00	$0.00	$0.00	$0.00	$0.00
FERNDALE	$3,581.42	$3,581.42	$0.00	$0.00	$0.00
FRASER	$4,960.88	$4,960.88	$0.00	$0.00	$0.00
GARDEN CITY	$6,103.24	$6,103.24	$0.00	$0.00	$0.00
GROSSE POINTE	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE FARMS	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE PARK	$1,182.65	$1,182.65	$0.00	$0.00	$0.00
GROSSE POINTE SHORES	$0.00	$0.00	$0.00	$0.00	$0.00
GROSSE POINTE WOODS	$2,629.33	$2,629.33	$0.00	$0.00	$0.00
HAMTRAMCK	$4,175.13	$4,175.13	$0.00	$0.00	$0.00
HARPER WOODS	$1,899.74	$1,899.74	$0.00	$0.00	$0.00
HARRISON TWP	$3,138.32	$3,138.32	$0.00	$0.00	$0.00
HAZEL PARK	$6,785.01	$6,785.01	$0.00	$0.00	$0.00
HIGHLAND PARK	$1,639,270.22	$8,494.17	$0.00	$6,753.52	$1,624,022.53
HUNTINGTON WOODS	$572.36	$572.36	$0.00	$0.00	$0.00
INDEPENDENCE	$4,791.68	$4,791.68	$0.00	$0.00	$0.00
INKSTER	$5,559.87	$5,559.87	$0.00	$0.00	$0.00
KEEGO HARBOR	$0.00	$0.00	$0.00	$0.00	$0.00
LAKE ORION	$803.30	$803.30	$0.00	$0.00	$0.00
LATHRUP	$1,406.81	$1,406.81	$0.00	$0.00	$0.00
LENOX TOWNSHIP	$814.23	$814.23	$0.00	$0.00	$0.00
LIVONIA	$40,067.30	$40,067.30	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	$206.29	$206.29	$0.00	$0.00	$0.00
MADISON HEIGHTS	$0.00	$0.00	$0.00	$0.00	$0.00
MELVINDALE	$3,629.99	$3,629.99	$0.00	$0.00	$0.00
NEW HAVEN	$611.43	$611.43	$0.00	$0.00	$0.00
NORTHVILLE	$2,160.97	$2,160.97	$0.00	$0.00	$0.00
NORTHVILLE TOWNSHIP	$96,835.90	$9,148.06	$0.00	$7,307.32	$80,380.52
NOVI	$17,276.18	$17,276.18	$0.00	$0.00	$0.00
OAK PARK	$13,548.31	$13,548.31	$0.00	$0.00	$0.00
OAKLAND TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
ORCHARD LAKE VILLAGE	$0.00	$0.00	$0.00	$0.00	$0.00
ORION TOWNSHIP (C-O)	$5,433.84	$5,433.84	$0.00	$0.00	$0.00
OXFORD TOWNSHIP	$933.25	$933.25	$0.00	$0.00	$0.00
OXFORD VILLAGE	$1,259.16	$1,259.16	$0.00	$0.00	$0.00
PLEASANT RIDGE	$547.54	$547.54	$0.00	$0.00	$0.00
PLYMOUTH	$0.00	$0.00	$0.00	$0.00	$0.00
PLYMOUTH TOWNSHIP	$269,543.50	$25,462.54	$0.00	$20,340.08	$223,740.88
REDFORD TOWNSHIP	$5,206.63	$5,206.63	$0.00	$0.00	$0.00
ROCHESTER HILLS	$18,303.17	$18,303.17	$0.00	$0.00	$0.00
ROMULUS	$926.07	$926.07	$0.00	$0.00	$0.00
ROSEVILLE	$28,463.17	$28,463.17	$0.00	$0.00	$0.00
ROYAL OAK	$0.00	$0.00	$0.00	$0.00	$0.00
ROYAL OAK TOWNSHIP	$0.00	$0.00	$0.00	$0.00	$0.00
SHELBY TOWNSHIP	$12,050.25	$12,050.25	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHFIELD (E-F)	$28,345.79	$28,345.79	$0.00	$0.00	$0.00
SOUTHFIELD (SEOC)	$3,802.43	$3,802.43	$0.00	$0.00	$0.00
ST. CLAIR SHORES	$12,146.92	$12,146.92	$0.00	$0.00	$0.00
STERLING HEIGHTS	$31,183.87	$31,183.87	$0.00	$0.00	$0.00
TROY (E-F)	$384.09	$384.09	$0.00	$0.00	$0.00
TROY (SEOC)	$74,030.46	$74,030.46	$0.00	$0.00	$0.00
UTICA	$(1,756.51)	$(1,756.51)	$0.00	$0.00	$0.00
VAN BUREN TOWNSHIP	$2,044.19	$2,044.19	$0.00	$0.00	$0.00
VILLAGE OF FRANKLIN	$0.00	$0.00	$0.00	$0.00	$0.00
WASHINGTON TOWNSHIP	$1,381.10	$1,381.10	$0.00	$0.00	$0.00
WATERFORD TOWNSHIP	$12,472.93	$12,472.93	$0.00	$0.00	$0.00
WAYNE	$5,017.87	$5,017.87	$0.00	$0.00	$0.00
WEST BLOOMFIELD TWP (C-O)	$944.01	$944.01	$0.00	$0.00	$0.00
WEST BLOOMFIELD TWP (E-F)	$6,307.99	$6,307.99	$0.00	$0.00	$0.00
WESTLAND	$23,145.94	$23,145.94	$0.00	$0.00	$0.00
TOTAL IWC ACCOUNTS	**$2,979,096.05**	**$651,145.44**	**$0.00**	**$64,862.76**	**$2,263,087.85**

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
HOUGHTON INTERNATIONAL INC.	$2,741.34	$2,741.34	$0.00	$0.00	$0.00
FORMING TECH	$0.00	$0.00	$0.00	$0.00	$0.00
UNCLE RAYS SNACKS, LLC	$16,310.87	$16,310.87	$0.00	$0.00	$0.00
GLOBAL TITANIUM, INC.	$0.00	$0.00	$0.00	$0.00	$0.00
HOUGHTON INTERNATIONAL INC.	$114.39	$114.39	$0.00	$0.00	$0.00
WINTER SAUSAGE MFG. CO.	$(140.54)	$(140.54)	$0.00	$0.00	$0.00
FRESH-PAK	$8,773.76	$8,773.76	$0.00	$0.00	$0.00
ALEXANDER & HORNUNG	$0.00	$0.00	$0.00	$0.00	$0.00
CHRYSLER STERLING STAMPING	$0.00	$0.00	$0.00	$0.00	$0.00
WOLVERINE PACKING CO	$7,506.42	$7,506.42	$0.00	$0.00	$0.00
DOMESTIC UNIFORM RENTAL	$2,096.15	$2,096.15	$0.00	$0.00	$0.00
DOMESTIC UNIFORM RENTAL	$3,428.72	$3,428.72	$0.00	$0.00	$0.00
PLATING SPEC	$0.00	$0.00	$0.00	$0.00	$0.00
CAPITAL REPRODUCTIONS	$1.76	$1.76	$0.00	$0.00	$0.00
J & G FOOD PRODUCTS, INC.	$114.70	$114.70	$0.00	$0.00	$0.00
FORMING TECH	$0.00	$0.00	$0.00	$0.00	$0.00
BLACK LOTUS BREWING CO.	$102.13	$0.00	$72.91	$0.00	$29.22
PETRO ENVIRON TECH, INC.	$0.00	$0.00	$0.00	$0.00	$0.00
PINE TREE ACRES, INC.	$33,609.46	$33,609.46	$0.00	$0.00	$0.00
RIVER ROUGE BREWING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
U-METCO, INC.	$1,449.09	$1,449.09	$0.00	$0.00	$0.00
3M COMPANY	$4,867.29	$4,867.29	$0.00	$0.00	$0.00
BREW DETROIT	$6,423.73	$6,423.73	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
UNITED FISH DISTRIBUTORS	$15.52	$15.52	$0.00	$0.00	$0.00
PRODUCTION SPRING, LLC.	$0.00	$0.00	$0.00	$0.00	$0.00
LEAR CORPORATION DBA EAGLE C	$5,975.88	$5,975.88	$0.00	$0.00	$0.00
UNITED TECH ESSEX GROUP	$0.00	$0.00	$0.00	$0.00	$0.00
A & R PACKING CO., LLC	$4,252.16	$4,252.16	$0.00	$0.00	$0.00
LA JALISCIENSE, INC.	$0.00	$0.00	$0.00	$0.00	$0.00
LA MICHOACANA FLOUR TORTILLA	$750.85	$750.85	$0.00	$0.00	$0.00
LA MICHOACANA FLOUR TORTILLA	$(68.58)	$0.00	$0.00	$(68.58)	$0.00
DETRONIC INDUSTRIES, INC.	$197.01	$197.01	$0.00	$0.00	$0.00
ADVANCE ENGINEERING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
GRANITE CITY FOOD & BREWERY	$0.00	$0.00	$0.00	$0.00	$0.00
UNCLE RAYS SNACKS, LLC	$84,705.11	$84,705.11	$0.00	$0.00	$0.00
SEAFARE FOODS, INC.	$61.35	$61.35	$0.00	$0.00	$0.00
DETROIT BEER	$0.00	$0.00	$0.00	$0.00	$0.00
HACIENDA MEXICAN FOODS	$3,329.67	$543.81	$649.55	$694.54	$1,441.77
MOTOR CITY BREWING WORKS	$(23.25)	$0.00	$0.00	$(23.25)	$0.00
TRAFFIC JAM & SNUG	$(0.48)	$0.00	$0.00	$0.00	$(0.48)
BOZEK'S MARKET	$120.29	$120.29	$0.00	$0.00	$0.00
PERSONAL UNIFORM SERVICE, IN	$138.55	$116.20	$22.35	$0.00	$0.00
CLASSIC CONTAINER CORP.	$0.00	$0.00	$0.00	$0.00	$0.00
NORTH CENTER BREWING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
EXTRUDEHODE	$0.00	$0.00	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FOUNDERS BREWING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
BAYS MICHIGAN CORPORATION	$305.39	$305.39	$0.00	$0.00	$0.00
MIBA HYDRAMECHANICA CORP.	$253.34	$253.34	$0.00	$0.00	$0.00
TURRI'S ITALIAN FOODS	$32,327.61	$32,327.61	$0.00	$0.00	$0.00
NORTHERN LAKES SEAFOOD & MEA	$42.63	$42.63	$0.00	$0.00	$0.00
RAY'S ICE CREAM CO.	$0.00	$0.00	$0.00	$0.00	$0.00
HUNTINGTON CLEANERS	$0.00	$0.00	$0.00	$0.00	$0.00
NATIONAL CHILI COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
NATIONAL CHILI COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
AXLE BREWING COMPANY, LLC	$0.00	$0.00	$0.00	$0.00	$0.00
BARON INDUSTRIES	$2,205.34	$2,205.34	$0.00	$0.00	$0.00
HOME STYLE FOOD INC.	$10,828.63	$10,828.63	$0.00	$0.00	$0.00
RED SPOT PAINT #409139	$73.94	$73.94	$0.00	$0.00	$0.00
INDUSTRIAL METAL COATING	$630.46	$630.46	$0.00	$0.00	$0.00
THE CROWN GROUP-LIVONIA PLAN	$0.00	$0.00	$0.00	$0.00	$0.00
COUNTRY FRESH DAIRY CO.	$46,381.33	$46,381.33	$0.00	$0.00	$0.00
ETON ST BREWERY- GRIFFIN CLA	$0.00	$0.00	$0.00	$0.00	$0.00
MINNIE MARIE BAKERS, INC	$3,408.90	$3,408.90	$0.00	$0.00	$0.00
MACDERMID, INC.	$4,393.49	$4,393.49	$0.00	$0.00	$0.00
DEARBORN SAUSAGE	$0.00	$0.00	$0.00	$0.00	$0.00
FITZGERALD FINISHING LLC	$0.00	$0.00	$0.00	$0.00	$0.00
GLOBAL TITANIUM, INC.	$6,022.64	$6,022.64	$0.00	$0.00	$0.00
ACME RUSTPROOF	$48.56	$48.56	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MISTER UNIFORM & MAT RENTALS	$641.70	$52.40	$28.32	$32.47	$528.51
KAR NUT PRODUCTS	$2,061.63	$2,061.63	$0.00	$0.00	$0.00
THE ROYAL OAK BREWERY	$(1,666.16)	$0.00	$0.00	$0.00	$(1,666.16)
EQ DETROIT, INC.	$452.59	$452.59	$0.00	$0.00	$0.00
EQ DETROIT, INC.	$2,319.65	$2,319.65	$0.00	$0.00	$0.00
EQ DETROIT, INC.	$(1,238.68)	$0.00	$0.00	$0.00	$(1,238.68)
EQ DETROIT, INC.	$(4,580.80)	$0.00	$0.00	$0.00	$(4,580.80)
HOUGHTON INTERNATIONAL INC.	$232.87	$232.87	$0.00	$0.00	$0.00
ALGAL SCIENTIFIC CORPORATION	$16,533.05	$1,392.94	$1,596.70	$1,516.53	$12,026.88
US ECOLOGY MICHIGAN	$(2,421.54)	$0.00	$0.00	$0.00	$(2,421.54)
ALPHA STAMPING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
POWER VAC OF MICHIGAN, INC.	$98.71	$98.71	$0.00	$0.00	$0.00
FARMINGTON BREWING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
CITY LAUNDRY, INC.	$6.38	$6.38	$0.00	$0.00	$0.00
WINTER SAUSAGE MFG. CO.	$825.28	$825.28	$0.00	$0.00	$0.00
COSTCO WHOLESALE STORE	$332.05	$332.05	$0.00	$0.00	$0.00
FAYGO BEVERAGES, INC.	$383,275.98	$91,861.53	$31,357.72	$32,235.09	$227,821.64
BETTER MADE SNACK FOOD	$20,977.44	$20,977.44	$0.00	$0.00	$0.00
BROADWAY MKT CORNED BEEF	$(95.88)	$0.00	$0.00	$0.00	$(95.88)
QUALA SERVICES, LLC	$319.25	$319.25	$0.00	$0.00	$0.00
DARLING INGREDIENTS, INC.	$6,635.77	$6,635.77	$0.00	$0.00	$0.00
CF BURGER CREAMERY	$19,643.81	$19,643.81	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
NATIONAL CHILI COMPANY	$9,617.29	$9,617.29	$0.00	$0.00	$0.00
COSTCO WHOLESALE STORE	$4,289.87	$4,289.87	$0.00	$0.00	$0.00
WIGLEY'S MEAT PROCESS	$626.65	$626.65	$0.00	$0.00	$0.00
INTEGRATED PACKAGING CORP	$0.00	$0.00	$0.00	$0.00	$0.00
JAMEX BREWING CO.	$0.00	$0.00	$0.00	$0.00	$0.00
SHERWOOD BREWING COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
DIFCO LABORATORIES, INC.	$11,162.69	$11,162.69	$0.00	$0.00	$0.00
KOWALSKI SAUSAGES, CO.	$1,494.33	$1,494.33	$0.00	$0.00	$0.00
PREMIER PLATING, LLC	$1,357.41	$1,357.41	$0.00	$0.00	$0.00
UNITED MEAT & DELI	$338.50	$338.50	$0.00	$0.00	$0.00
MICHIGAN DAIRY	$90,072.21	$90,072.21	$0.00	$0.00	$0.00
B. NEKTAR MEADERY	$0.00	$0.00	$0.00	$0.00	$0.00
BAFFIN BREWING COMPANY	$528.31	$0.00	$0.00	$0.00	$528.31
DETROIT RIVERTOWN BREWERY CC	$0.00	$0.00	$0.00	$0.00	$0.00
SWEETHEART BAKERY, INC.	$711.79	$147.15	$76.34	$80.66	$407.64
DETROIT METRO WC AIRPORT	$0.00	$0.00	$0.00	$0.00	$0.00
FRESH-PAK	$3,205.78	$3,205.78	$0.00	$0.00	$0.00
ATWATER IN THE PARK	$0.00	$0.00	$0.00	$0.00	$0.00
ROCHESTER MILLS PROD BREWERY	$2,546.54	$0.00	$1,348.02	$0.00	$1,198.52
LIBERTY STREET PROD. BREWERY	$0.00	$0.00	$0.00	$0.00	$0.00
CANTON BREW WORKS	$70.31	$0.00	$70.31	$0.00	$0.00
ROAK BREWING CO. LLC	$2,796.70	$0.00	$823.50	$0.00	$1,973.20
METROPOLITAN BAKERY	$933.56	$933.56	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
AEVITAS SPECIALITY SERVICES	$30,741.58	$22,838.61	$7,902.97	$0.00	$0.00
VERNDALE PRODUCTS	$17,260.91	$17,260.91	$0.00	$0.00	$0.00
PEPSI COLA, INC.	$40,867.25	$40,867.25	$0.00	$0.00	$0.00
PELLERITO FOODS INC.	$1,673.48	$1,673.48	$0.00	$0.00	$0.00
MICHIGAN SOY PRODUCTS CO.	$0.00	$0.00	$0.00	$0.00	$0.00
BASTONE BREWERY	$0.00	$0.00	$0.00	$0.00	$0.00
CROSS CHEMICAL COMPANY, INC.	$3,701.26	$2,154.95	$0.00	$0.00	$1,546.31
ITALIAN BUTTER BREAD STICKS	$7.91	$7.91	$0.00	$0.00	$0.00
DETROIT LINEN SERVICE	$0.00	$0.00	$0.00	$0.00	$0.00
SMITH-WATKINS, LLC	$0.00	$0.00	$0.00	$0.00	$0.00
TOM LAUNDRY CLEANERS	$0.00	$0.00	$0.00	$0.00	$0.00
DEARBORN BREWING	$0.00	$0.00	$0.00	$0.00	$0.00
COSTCO WHOLESALE STORE	$5,521.03	$5,521.03	$0.00	$0.00	$0.00
OLIVER HATCH CONSTRUCTION	$0.00	$0.00	$0.00	$0.00	$0.00
UNIQUE LINEN SERVICES, INC.	$97.06	$97.06	$0.00	$0.00	$0.00
FORD NEW MODEL PROGRAM	$1,364.99	$1,364.99	$0.00	$0.00	$0.00
E.W. GROBBEL'S SONS, INC.	$3,351.46	$3,351.46	$0.00	$0.00	$0.00
ISLAMIC SLAUGHTER HOUSE	$1,846.01	$1,424.70	$421.31	$0.00	$0.00
GENERAL LINEN SUPPLY CO.	$63,749.95	$12,858.37	$5,587.17	$5,900.00	$39,404.41
KVF TROY CORPORATION	$0.00	$0.00	$0.00	$0.00	$0.00
BATCH BREWING COMPANY	$(502.36)	$0.00	$0.00	$0.00	$(502.36)
ADVANCED RESOURCE RECOVERY	$885.99	$885.99	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
CINTAS CORP. - MACOMB TWP.	$0.00	$0.00	$0.00	$0.00	$0.00
GRANITE CITY FOOD & BREWERY	$0.00	$0.00	$0.00	$0.00	$0.00
MELLO MEATS INC, - KUBISCH S	$83.92	$83.92	$0.00	$0.00	$0.00
S & D PACKING	$0.00	$0.00	$0.00	$0.00	$0.00
EASTERN MARKET BREWING COMPA	$0.00	$0.00	$0.00	$0.00	$0.00
KUBISCH SAUSAGE CO.	$0.00	$0.00	$0.00	$0.00	$0.00
USHER OIL SERVICES	$4,414.65	$4,414.65	$0.00	$0.00	$0.00
RTT	$23,842.21	$366.64	$331.65	$0.00	$23,143.92
MILANO BAKERY	$2,976.33	$2,288.23	$688.10	$0.00	$0.00
TURRI'S ITALIAN FOODS	$0.00	$0.00	$0.00	$0.00	$0.00
BEIRUT BAKERY, INC.	$63.29	$63.29	$0.00	$0.00	$0.00
MCGEAN CHEMICALS	$0.00	$0.00	$0.00	$0.00	$0.00
UNITED LINEN SERVICE, LLC.	$287.30	$287.30	$0.00	$0.00	$0.00
CINTAS CORPORATION	$19,559.64	$19,559.64	$0.00	$0.00	$0.00
DETROIT SAUSAGES CO INC	$30.77	$30.77	$0.00	$0.00	$0.00
ALEXANDER & HORNUNG	$0.00	$0.00	$0.00	$0.00	$0.00
ALEXANDER & HORNUNG	$0.00	$0.00	$0.00	$0.00	$0.00
HENKEL CORPORATION	$575.97	$32.78	$0.00	$151.94	$391.25
AACTRON	$0.00	$0.00	$0.00	$0.00	$0.00
BARTZ BAKERY	$0.00	$0.00	$0.00	$0.00	$0.00
COSTCO WHOLESALE STORE	$690.36	$690.36	$0.00	$0.00	$0.00
ALL CHEM CORP, LLC.	$(126.78)	$0.00	$0.00	$0.00	$(126.78)
GRANITE CITY FOOD & BREWERY	$129.33	$0.00	$129.33	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MICHIGAN PROD. MACHINING	$0.00	$0.00	$0.00	$0.00	$0.00
GREAT BARABOO BREWING CO.	$(2,319.23)	$0.00	$0.00	$0.00	$(2,319.23)
US ECOLOGY ROMULUS, INC.	$2,068.54	$2,068.54	$0.00	$0.00	$0.00
CHRYSLER STERLING STAMPING	$0.00	$0.00	$0.00	$0.00	$0.00
BROOKS BREWING, LLC.	$0.00	$0.00	$0.00	$0.00	$0.00
VERNOR FOOD PRODUCTS	$72.52	$72.52	$0.00	$0.00	$0.00
DAVE'S SAUSAGE FACTORY 2	$0.00	$0.00	$0.00	$0.00	$0.00
CHILANGO'S BAKERY	$2,046.94	$47.46	$20.74	$27.12	$1,951.62
JPT PROPERTIES	$0.00	$0.00	$0.00	$0.00	$0.00
EXTRUDE HONE CORPORATION	$107.38	$107.38	$0.00	$0.00	$0.00
OAKWOOD BAKERY	$38.82	$38.82	$0.00	$0.00	$0.00
COCA-COLA REFRESHMENTS USA,	$5,154.47	$5,154.47	$0.00	$0.00	$0.00
LILY'S SEAFOOD GRILL & BREWE	$0.00	$0.00	$0.00	$0.00	$0.00
ROCHESTER MILLS BEER COMPANY	$0.00	$0.00	$0.00	$0.00	$0.00
VERNDALE PRODUCTS, INC.	$7,129.80	$7,129.80	$0.00	$0.00	$0.00
CINTAS CORPORATION	$30,742.81	$30,742.81	$0.00	$0.00	$0.00
MILTON CHILI CO.	$58.57	$58.57	$0.00	$0.00	$0.00
WOLVERINE PACKING CO.	$2,945.82	$2,945.82	$0.00	$0.00	$0.00
SPRAYTEK, INC.	$4,094.08	$24.06	$24.25	$22.60	$4,023.17
MCNICHOLS POLISHING & ANODIZ	$45.10	$45.10	$0.00	$0.00	$0.00
DIVERSIFIED CHEM TECH. INC.	$164.29	$164.29	$0.00	$0.00	$0.00
WOODWARD AVENUE BREWERS	$0.00	$0.00	$0.00	$0.00	$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 9/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MIDWEST WIRE PRODUCTS, INC.	$(2.94)	$0.00	$0.00	$0.00	$(2.94)
DEARBORN SAUSAGE CO., INC.	$0.00	$0.00	$0.00	$0.00	$0.00
ACADEMY PACKING CO.	$0.00	$0.00	$0.00	$0.00	$0.00
ENVIROSOLIDS, L.L.C.	$161,320.77	$0.00	$161,320.77	$0.00	$0.00
AUTOMOTIVE FINISH	$0.00	$0.00	$0.00	$0.00	$0.00
HOOD CLEANERS	$210.36	$0.00	$0.00	$0.00	$210.36
AMERICAN WASTE TECH INC.	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL POLLUTANT SURCHARGE	**$1,304,852.26**	**$748,139.25**	**$212,472.01**	**$40,569.12**	**$303,671.88**

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Andrew Sosnoski, Manager, Construction Accounting & Financial Reporting

Re: FY 2019 Q1 Construction Work-in-Progress Report through September 30, 2018

Background: The quarterly construction work-in-progress (CWIP) provides information and analysis related to the execution of the Great Lakes Water Authority capital improvement program (CIP).

Analysis: The attached documents summarize the FY 2019 Q1 CWIP activity and provides a detailed snapshot to inform decision makers and stakeholders.

Proposed Action: Receive and file report.

Construction Work-in-Progress Quarterly Report
(Unaudited, Pre-close)

As of September 30, 2018

For questions, please contact:

Andrew Sosnoski
Construction Accounting and Financial Reporting Manager
Phone: 313.999.2585
Email: Andrew.Sosnoski@glwater.org

Prepared 12.14.2018

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December 21st, 2018

To Our Stakeholders:

The contents of this report represent the financial presentation of construction work-in-progress activity for the Great Lakes Water Authority (GLWA) as of September 30, 2018. The information in this report presents a detailed snapshot and is important as we track the execution of the FY 2019–2023 Capital Improvement Plan (CIP) and develop the FY 2020–2024 CIP.

As we continue to refine this report to better communicate pertinent information to inform decision makers and stakeholders content and formatting may be changed. We have successfully implemented a technology solution to improve direct labor capture accuracy, timeliness and ease in which labor costs are captured. This solution named BigTime, was successfully launched on the previously anticipated month of July 2018. Additionally, we have revamped the Construction Work-in-Progress (CWIP) rollforward in a manner we believe will be found more useful.

Report Contents and Organization

This report is divided into two sections: one for the Water System and one for the Wastewater System as identified in the table of contents. Each section includes analysis and reporting of the following:

Percent of Spend Compared to Budget and Capital Improvement Plan (CIP) Requests: Presentation of spend information is necessary to report our progress on CIP projects.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects: A combination of commentary and analysis provides further insight into risk factors and project status. An excerpt from the CIP for each of the selected projects follows the commentary as further background information.

Construction Work-in-Progress Rollforward: This table provides a list of all projects in the CIP along with status or financial activity. This table may be used to revisit priorities, workload, and phasing.

Financial Information

All project amounts are unaudited and are "pre-close". This means that direct contractor costs are generally included in these totals with most pay estimates entered through September 30, 2018. There may, however, be some pay estimates that lag. The totals do not include indirect overhead.

Budget vs. Plan

Generally, GLWA's CIP projects span two or more fiscal years. The GLWA Board of Directors adopts a biennial "budget" and a five-year capital improvement "plan".

- ✓ The adopted **budget** relates to operations and maintenance expense, annual fixed commitments such as debt service, and incremental adjustments to reserves. The budget provides authority to spend within defined amounts. The budget is also referred to as the "revenue requirement" for the utility.
- ✓ The CIP "budget" for the same biennial budget period above is based on the first two years of the CIP. Funding for these projects are established in the financial plan through a combination of bond proceeds and Improvement & Extension fund reserves
- ✓ The five-year capital improvement **plan** is a rolling plan that is updated at an administrative tracking level as projects move from estimated to actual bid numbers. An updated mid-cycle CIP would be presented to the Board for approval if the prioritization strategy was revised and/or the plan was in need of material revisions.

Future Enhancements

This report presents information that is readily available. Currently under development are enhancements that will provide the opportunity for improved CWIP reporting.

Monthly Capital Spend Projections – Implementation of an integrated master schedule of projects utilizing Primavera P6 is underway. The integrated master schedule, which is intended to be updated monthly, will provide a monthly snapshot of cost and schedule information related to the execution of projects as compared to our plan. In addition to an increased visibility to project status and spend, this joint effort with our engineering partners will also allow for improved accuracy of our Key Performance Indicator on rate of spending and more reliable communication with Treasury regarding monthly capital spend projections to allow for investment optimization.

Look Ahead Reporting – By way of the integrated master scheduled will communicate upcoming planned timing of development of scopes, planned durations for RFB/RFP solicitations as well as any planned design or construction starts/finish dates for a given duration.

WATER SYSTEM

Percent of Spend Compared to Annual Budget and Capital Improvement Plan (CIP) Requests

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Water System spend for the period ending September 30, 2018 is 103.8% of the FY 2019 prorated budget. Numerous project designs have already and/or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

Water System Projects	FY 2018 Amended Budget	FY 2018 Pre-Close Activity (Unaudited)	FY 2018 Pre-Close as a Percent of Budget (Unaudited)	FY 2019 Amended Budget	FY 2019 Prorated (Three Months)	FY 2019 Pre-Close Activity (Three Months) (Unaudited)	FY 2019 Pre-Close as a Percent of Prorated Budget (Three Months) (Unaudited)
FY 2018 CIP Project Requests	$ 137,655,000	$ 37,013,482	26.9%				
FY 2018 CIP Realigned Forecast as per 2019 CIP	40,043,000	37,013,482	92.4%				
FY 2019 CIP Project Requests				$ 66,038,000	$ 16,509,500	$ 17,142,579	103.8%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects

Of the total Water System Construction Bond spend for FY 2019 to date, **four projects account for $8.6 million or 50.0% of the total spend**. Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	**14.2%**
Project 114001- Springwells WTP 1958 Filter Rehabilitation	$ 93,464,000	$ 66,571,119	$ 3,501,000	$ 2,009,685	**11.7%**
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	**10.0%**
Project 116002- PA, SW and NE Raw Water Tunnel Improvements	33,079,000	2,177,985	9,042,000	2,416,810	**14.1%**
Selected Projects as a Percentage of the Total	$ 138,091,000	$ 71,737,457	$ 18,629,000	$ 8,575,154	**50.0%**
Total			**$ 66,038,000**	**$ 17,142,579**	**100.0%**

The following analysis provides brief highlights related to these projects.

Project 111002 – LH WTP Miscellaneous Mechanical HVAC Improvements

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	**14.2%**

Project Engineer/Manager: Todd King
Manager: Grant Gartrell
Total Budget: $8,642,000
Timeline: May 2020
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: CON-212 Detroit Contracting, Inc.

Project Description: Replacement of existing heating, ventilating and air-conditioning systems with new, energy efficient mechanical HVAC systems.

Purpose: Rehabilitation of the meters will provide direct measurement of finished water flows that are pumped out of the plants to the transmission system. The rehabilitated flow meters will improve the accuracy and reliability of measuring water production flows from these water treatment plants.

Status: The project is proceeding in accordance with the established schedule. The roof based HVAC equipment was successfully placed using a helicopter in accordance with the plan on October 23, 2018.

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements

CIP Number: 111002
Old CIP No.: 1280
Project Title: LH WTP Miscellaneous Mechanical HVAC Improvements

Project Status Active
Budget: Water
Classification Lvl 1: Water
Classification Lvl 2: Treatment Plants & Facilities
Classification Lvl 3: Lake Huron
Project Location: Saint Clair County

☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score 77



The photo shows the condition of the heating system hot water piping buildup which necessitates the complete replacement of the hot water radiant system in the filter building and other areas of the LH WTP.

Project Significance: Existing heating, ventilating and air-conditioning systems Lake Huron are 40 years old and are either not operable or energy-inefficient. Thus, replacement with new, energy efficient mechanical HVAC systems is needed.

Project Engineer/Manager: Todd King
Manager: Grant Gartrell

Scope of Work: The work includes replacement of the existing Natural Gas-Fired hot water boilers, back flow preventers, and dehumidification units with related accessories.

Challenges: Heating system modifications will be seasonally dependent.

Phase Expenses

PHASE	Construction	Contract No	CON-182	Phase Status	Future Planned Start
Phase Title	CON-182, Miscellaneous Mechanical Improvements at Lake Huron WTP, C1				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	165	0	0	0	0	0	0

PHASE	Study and Design and Construction Assistance	Contract No	CS-1732	Phase Status	Active
Phase Title	CS-1732, Miscellaneous Mechanical Improvements at Lake Huron WTP				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	233	131	131	13	0	0	0

PHASE	Construction	Contract No	CON-212	Phase Status	New
Phase Title	CON-212, LH WTP Electrical & Mechanical Process Improvements, C2				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	383	3,535	3,742	0	0		0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
781	3,666	3,873	13	0	0	0

FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements

CIP Number: 111002

Phase Tasks and Dates

Phase Category	C
Budget	Water
Phase Status	New
Contract No	CON-212
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	11/15/2016	90	2/13/2017
Procurement	2/14/2017	365	2/14/2018
Project Execution	2/15/2018	798	4/23/2020
Project Closeout	4/24/2020	90	7/23/2020

Phase Category	C
Budget	Water
Phase Status	Future Planned Start
Contract No	CON-182
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	8/27/2016	90	11/25/2016
Procurement	11/26/2016	365	11/26/2017
Project Execution	11/27/2017	179	5/25/2018
Project Closeout	5/26/2018	90	8/24/2018

Phase Category	S/D/CA
Budget	Water
Phase Status	Active
Contract No	CS-1732
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	2/21/2015	90	5/22/2015
Procurement	5/23/2015	365	5/22/2016
Project Execution	5/23/2016	1431	4/23/2020
Project Closeout	4/24/2020	90	7/23/2020

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		270	1,030	3,130	3,050	422				7,902
2019	18	291	781	3,666	3,873	13	0	0	0	8,642

Description of CIP Changes: added GLWA costs; made relatively minor increase to overall budget to account for inflation.

Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 114001- Springwells WTP 1958 Filter Rehabilitation	$ 93,464,000	$ 66,571,119	$ 3,501,000	$ 2,009,685	**11.7%**

Project Engineer/Manager: Grant Gartrell
Manager: Grant Gartrell
Total Construction and Construction Assistance Budget: $77,422,000
Timeline: To be completed by November 2018
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: SP-563 Walsh Construction; CS-1425 & CS-200 CDM Michigan

Project Description: Installation of new filter media, underdrains, filter valves and rate controllers; replace the existing filter control console and hydraulic controls at Springwells Water Treatment Plant.

Purpose: Rehabilitation of both filter trains to restore filtration capacity and sustain the useful service life of the process treatment infrastructure.

Status: Construction continues with the renovation of the laboratory and offices in the administration building, installation of new heating, ventilating and air-conditioning equipment in the administration building, construction of the 1958 breezeway, installation of high-pressure water pumping unit, constant-level washwater tank fill control valve and phosphoric acid feed system, upgrading the plant's distributed control system and related instrumentation serving the 1930 and 1958 filters and chemical feed systems, startup and commissioning of the dehumidification, ventilation and heating systems for the 1930 and 1958 filter buildings, and final operational demonstration testing of the re-constructed 1958 filters.

Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: Total project budget per the Board approved CIP schedule does not include the historical, pre-fiscal year 2017 budget for the design contract CS-1425 nor the allocation of the Water Treatment Plant Allowance to fund CS-200 the Owner's Representative (RPR) consultant contract. The design contract has a total budget amount of $6,500,000.

FY 2019-2023 CIP Page 38 for Project 114001- Springwells WTP 1958 Filter Rehabilitation and Auxiliary Facilities

CIP Number: 114001
Old CIP No.: 917
Project Title: SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities

Project Status Active
Budget: Water
Classification Lvl 1: Water
Classification Lvl 2: Treatment Plants & Facilities
Classification Lvl 3: Springwells
Project Location: Wayne County - Outside Detroit

☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score 62.2


Springwells filter building

Project Significance: Rehabilitation of Springwells WTP 1958 Filters and 1930s failed filters to provide the WTP with a renovated capacity of 295 MGD
Project Engineer/Manager: Eric Kramp
Manager: Grant Gartrell

Scope of Work: This project includes the study, design (CS-1425) and construction assistance of improvements to the Springwells WTP that includes the replacement of Phosphoric Acid Feed System, rehabilitation of the 1958 Filters, rehabilitation of failed 1930s Filters, Update of Operation and Maintenance Manuals, and addition of polymer systems and controls. Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraulic control valves with electric control valves, enclosures; add appurtenances to enable automatic backwashing of the filters; provide a Filter Aid Polymer System to the 1930 and 1958 filter complexes; Programmable Logic Controller-based controls for automatic control of the polymer system; install a local instrumentation and controls system.

Challenges: N/A - Active

Phase Expenses

PHASE	Construction	Contract No	SP-563	Phase Status	Active
Phase Title	SP-563, Walsh, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities ©				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	6,327	3,028	0	0	0	0	0

PHASE	Study and Design and Construction Assistance	Contract No	CS-1425	Phase Status	Active
Phase Title	CS-1425, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E1 & E2)				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	479	118	0	0	0	0	0

PHASE	Construction Assistance	Contract No	CS-200	Phase Status	Active
Phase Title	CS-200, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E3)				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	445	355					

FY 2019-2023 CIP Page 62 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

CIP Number: 114001

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	56,759	20,353	310							77,422
2019	71,252	11,430	7,281	3,501	0	0	0	0	0	93,464

Description of CIP Changes	Updated construction based on actual invoicing to date from Walsh; extended completion due to anticipated change order for time only; added GLWA costs.

Project 114012-Springwells WTP 1930 Filter Building Roof Replacement

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	**10.0%**

Project Engineer/Manager: Peter Fromm
Manager: Paula Anderson
Total Budget: $2,906,000
Timeline: Spring 2019
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: DB-093 Schreiber Corporation

Project Description: A design-build project that includes the inspection/investigation of the old roof, design, and the replacement of the 1930 Filter Building roof. Project also included the inspection of roof drains before and after construction in addition to replacement of the gutters.

Purpose: The 1930 Filter Building Roof System was failing and causing water to leak into the 1930 Filter Building.

Status: The contract started on April 18, 2018. The contractor has 40 out of the 46 roof sections completed with 37 out of the 46 sections completed with the new sheet metal. The project is on-schedule and will be completed on or before April 17, 2019.

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Page 62 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

CIP Number: 114012
Old CIP No.: 1320
Project Title: SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement

Project Status Active
Budget: Water
Classification Lvl 1: Water
Classification Lvl 2: Treatment Plants & Facilities
Classification Lvl 3: Springwells
Project Location: Wayne County - Outside Detroit

☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score 61



Filter Building roof

Project Significance: The existing roof over the 1930 filters is leaking in places and poses water quality concerns due to roof leaks.
Project Engineer/Manager: Paula Anderson
Manager: Paula Anderson
Scope of Work: This project encompasses replacement of the existing 1930 Filter Building roofing system, including the built-up roofing material, flashing, roof drains/conductors and sealing cap stones to prevent water from penetrating the building envelop and causing water damage. Construction activity under Contract SP-563 in 2014-2015 revealed that water damage has been on-going and is causing clerestory window lintel deterioration. Additionally, construction traffic under Contract SP-563 has shown the built-up material to be blistering and spongy.
Challenges: Seasonal construction work, and construction will require working around new rooftop equipment installed under SP-563.

Phase Expenses

PHASE	Design and Build	Contract No	NA	Phase Status	Under Procurement
Phase Title	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement				

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Phase Total	486	2,420	0	0	0	0	0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
486	2,420	0	0	0	0	0

Phase Tasks and Dates

Phase Category	DB
Budget	Water
Phase Status	Under Procurement
Contract No	NA
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Scope Development	10/1/2017	91	12/31/2017
Procurement	12/31/2017	272	9/29/2018
Project Execution	9/29/2018	456	12/29/2019

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FY 2019-2023 CIP Page 63 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

CIP Number: 114012

Task Name	Start Date	Duration	End Date
Project Closeout	12/29/2019	90	3/28/2020

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		3,000								3,000
2019			486	2,420	0	0	0	0	0	2,906

Description of CIP Changes: Changes made due to delay in getting bid documents released for bidding purposes.

Project 116002 – PA, SW and NE Raw Water Tunnel Improvements

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 116002- PA, SW and NE Raw Water Tunnel Improvements	33,079,000	2,177,985	9,042,000	2,416,810	**14.1%**

Project Engineer/Manger: Todd King
Manager: Grant Gartrell
Total Budget: $33,079,000
Timeline: The detailed investigation and preliminary design work under this contract is scheduled to be completed by March 2019. Once the preliminary design is complete, the vendor will submit a guaranteed maximum price (GMP) for the construction of the raw water tunnel rehabilitation and improvements work which is tentatively scheduled to be completed by 2021.
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: DB-150 / Ballard Marine Construction

Project Description: This is a progressive design build project delivery that involves the detailed inspection, design and construction of the improvements to the Pennsylvania, Northeast and Springwells raw water tunnels.

Purpose: Rehabilitate sections of the Pennsylvania, Northeast and Springwells raw water tunnels where substantial deterioration in the form of cracking and ovality have been observed.

Status: The contract started on January 29, 2018. The supplemental inspection by remote operated vehicles for the repair areas for all three tunnels has been completed. The geotechnical investigation for the repair areas for all three tunnels has been completed. The supplemental diver inspection, coring, and crack mapping for the Pennsylvania and Springwells tunnels has been completed. The Northeast tunnel work will conclude in early November. A preliminary findings meeting will be scheduled for mid-January 2019.

Additional Project Manager Comments: There are no additional comments to provide at this time.

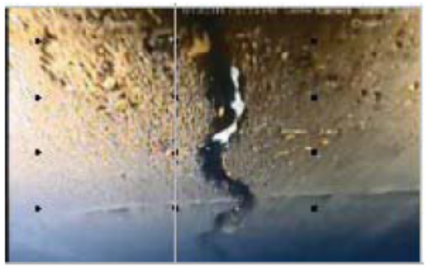
FY 2019-2023 CIP Page 80 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements

CIP Number: 116002
Old CIP No.: 1327
Project Title: Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements

Project Status Active
Budget: Water
Classification Lvl 1: Water
Classification Lvl 2: Treatment Plants & Facilities
Classification Lvl 3: General Purpose
Project Location: City of Detroit

☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score



Crown cracks are especially concerning in the Springwells Raw Water Tunnel

Project Significance: Project critical to production at Springwells WTP during repurposing of Northeast WTP as recommended by the 2015 WMPU. Contract CS-1623 identified problem areas on the raw water supply system that compromised the system's ability to meet demands during the repurposing of Northeast WTP.

Project Engineer/Manager: Todd King

Manager: Grant Gartrell

Scope of Work: The scope of work is to conduct supplemental investigations to design the repairs for the sections of tunnel identified in CS-1623 as having structural concerns. Three areas were identified with the highest concern being a portion of the Springwells Tunnel near the Springwells WTP.

Challenges: The tunnels are approximately 80 feet below the surface of the Detroit River. This poses challenges for assessing the extent of damage to the structures, as well as repair. Dewatering the tunnels to repair them will create extensive stresses that must be considered prior to performing the work. Maintaining a supply of raw water to Springwells, Northeast and Water Works Park throughout construction to meet finished water production requirements/demands of the system. Specialized/complicated construction.

Phase Expenses

PHASE	Design and Build	Contract No	DB-150	Phase Status	Active
Phase Title	DB-150 Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements				

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Phase Total	3,625	9,042	5,468	5,468	5,468	3,998	

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
3,625	9,042	5,468	5,468	5,468	3,998	

Phase Tasks and Dates

Phase Category	DB
Budget	Water
Phase Status	Active

Design and Build

Task Name	Start Date	Duration	End Date

FY 2019-2023 CIP Page 81 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements

CIP Number: **116002**

Contract No	DB-150
Cost Est Class	

Task Name	Start Date	Duration	End Date
Procurement	2/14/2017	365	2/14/2018
Project Execution	2/15/2018	1796	1/16/2023
Project Closeout	1/17/2023	90	4/17/2023

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		500	2,000	10,000	15,000	4,900				32,400
2019		10	3,625	9,042	5,468	5,468	5,468	3,998		33,079

Description of CIP Changes	This project now includes CIP 116001 that was previously included in the CIP 2018-2022 with projected expenses of $2,5M.

Construction Work-in-Progress Rollforward

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

The CWIP Rollforward provides a project status for each item.

Future Year:	Project that was included in the CIP with no expenditures (F)
Active:	Project in which procurement process has been initiated and expenditures incurred (A)
Pending Close:	Project that has no projected expenditures for the current fiscal year and has reached substantial completion (PC)
Closed:	Project that has been closed and capitalized (C)

As part of our project life cycle review the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. No projects have been identified for Q1 FY 2019 capitalization.

$**159.0** million is in CWIP as of September 30, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.

Status	Project Count	Total Project Estimated Budget	Percent of Total
Future	35	613,030,000	36.40%
Active	76	1,050,353,000	62.35%
Pending Close	5	20,110,000	0.19%
Closed	3	709,000	0.04%
Grand Total	**119**	**1,684,202,000**	**100%**

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward
Unaudited, Pre-Close Activity For the Fiscal Year Ended September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111002	LHWTP Backflow Replacement	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	$ 4,304,299	$ 155,348	$ 4,459,647	52%
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements based on	33,079,000	2,177,985	9,042,000	2,416,810	4,594,795		4,594,795	14%
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	93,464,000	66,571,119	3,501,000	2,009,685	68,580,803	22,738,455	91,319,258	98%
114012	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	2,832,713		2,832,713	97%
115004	Water Works Park WTP Chlorine System Upgrade	7,049,000	2,526,753	3,124,000	1,295,093	3,821,846		3,821,846	54%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	7,159,000	3,444,814	2,506,000	1,253,088	4,697,902		4,697,902	66%
170502	Transmission System Valve Assessment and Rehabilitation/Replacem e		248,175		1,144,618	1,392,793	3,182,318	4,575,112	100%
114015	Emergency Grating Replacement at Springwells WTP	2,772,000	203,833	11,000	719,531	923,364	2,533,164	3,456,527	125%
114002	Springwells Water Treatment Plant - Low Lift and High Lift Pump Station	85,503,000	498,042	1,433,000	503,425	1,001,467		1,001,467	1%
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	132,667,000	1,129,751	1,797,000	474,952	1,604,702		1,604,702	1%
122003	New Waterworks Park to Northeast Transmission Main	130,879,000	1,655,004	1,372,000	324,419	1,979,423		1,979,423	2%
170301	Water Plant Automation		1,376,747		313,171	1,689,918		1,689,918	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	71,051,000	681,626	968,000	300,071	981,697		981,697	1%
132008	Needs Assessment Study for all Water Booster Pumping Stations	1,933,000	912,550	1,178,000	280,569	1,193,118		1,193,118	62%
170104	Orion and Newburgh Pumping Stations Improvements		364,343		253,603	617,946		617,946	100%
112002	Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP	1,717,000	472,953	831,000	245,332	718,285		718,285	42%
170120	Phsphoric Acid Feed System Improvements at Southwest WTP		130,688		230,110	360,799		360,799	100%
113004	Residual Handling Facility's Decant Flow Modifications at Southwest WTP	3,352,000	198,431	1,054,000	199,356	397,787		397,787	12%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111007	Lake Huron WTP-Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	7,084,000	283,989	212,000	179,226	463,215		463,215	7%
114013	Springwells Reservoir Fill Line Improvements	6,508,000	332,385	2,469,000	125,869	458,254		458,254	7%
114006	Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train	1,722,000	176,992	1,284,000	118,667	295,658		295,658	17%
122011	Park-Merriman Water Main-Final Phase	6,209,000	156,338	955,000	90,215	246,553		246,553	4%
122012	36-inch Water Main in Telegraph Road	10,385,000	9,418,001	3,000	87,550	9,505,551		9,505,551	92%
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	24,319,000	126,146	1,743,000	87,386	213,532		213,532	1%
132004	Hydraulic Surge Control for North Service Center Pumping Station	232,000	214,771		69,348	284,119		284,119	122%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
132006	Pressure and Control Improvements at the Electric, Ford Road, Michigan, and West Chica	2,609,000	161,460	245,000	64,056	225,516		225,516	9%
171501	Roof Replacement - Var Water Facilities		50,420	111,000	53,488	103,908		103,908	100%
170401	Emergency Bypass Around Ypsilanti Station		-		38,427	38,427		38,427	100%
122005	Replacement Schoolcraft Watermain	13,805,000	3,960	50,000	35,866	39,826		39,826	0%
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	557,000	9,170	38,000	29,816	38,986		38,986	7%
114008	1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at Springwells WTP	17,107,000	-	424,000	29,019	29,019		29,019	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
132010	West Service Center/Duval Rd Division Valve Upgrades	37,136,000	-		23,745	23,745		23,745	0%
115003	Comprehensive Condition Assessment at Waterworks Park WTP	546,000	439,606	262,000	17,190	456,796		456,796	84%
111006	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake	26,315,000	734,756	43,000	15,151	749,908		749,908	3%
170109	Inspection of Raw Water Intakes and Tunnels		3,054,241		14,006	3,068,247		3,068,247	100%
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	11,621,000	473,029	1,406,000	11,197	484,226		484,226	4%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	4,832,000	62,685	414,000	10,458	73,144		73,144	2%
170102	Water Production Plant Flow Mettering Improvements at NE, SP & SW WTP		335,197		10,269	345,466		345,466	100%
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	5,484,000	249,447	1,157,000	10,011	259,458		259,458	5%
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	1,538,000	138,390	1,229,000	8,313	146,704		146,704	10%
111001	Energy Management: Lake Huron Water Treatment Plant Low Lift Pumping Improvements	52,388,000	-		5,632	5,632		5,632	0%
122016	Downriver Transmission Loop	37,197,000	-		3,355	3,355		3,355	0%
132012	Ypsilanti PS Improvements	9,147,000	3,648	93,000	3,258	6,906		6,906	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
122013	Lyon Township Transmission Main Extension Project	54,426,000	-		3,257	3,257		3,257	0%
170201	Construction & Environmental Testing		1,609		3,239	4,848		4,848	100%
114005	Springwells WTP Admin Building Improvements	8,125,000	-	30,000	3,028	3,028		3,028	0%
170121	Franklin PS Valve Rehab		-		1,865	1,865		1,865	100%
112004	NE WTP Relocation of Service Line	2,460,000	-		1,155	1,155		1,155	0%
170103	Belle Isle Water Supply Intake and Ice Boom Improvements		-		879	879	286,596	287,475	100%
132024	Project Cancelled	19,109,000	-		440	440		440	0%
114010	Yard Piping Improvements	110,129,000			292	292		292	0%
132023	Project Cancelled	19,109,000	-		219	219		219	0%
111008	LHWTP Architectural Programming - Lab	300,000	-		102	102		102	0%
113003	Replacement of Butterfly Valves	148,286,000	-		51	51		51	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170801	Reservoir Inspection, Design and Rehabilitation at Imlay Station,		-		43	43		43	100%
170200	As Needed Construction Materials, Environmental Media and Speical	1,788,000		472,000		-		-	0%
170110	Raw Water Sampling Improvements		2,926			2,926		2,926	100%
122001	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road	35,384,000	33,565,809		-	33,565,809		33,565,809	95%
170500	Transmission System Valve Assessment and Rehabilitation/Replacem e	22,000,000		4,000,000		-		-	0%
170400	Water Transmission Improvement Program	11,804,000		1,000,000		-		-	0%
132001	Wick Road Station Rehabilitation	147,000	130,253			130,253		130,253	89%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
114009	Springwells Water Treatment Plant Service Area Redundancy Study	338,000	311,129			311,129		311,129	92%
122007	Design and Construction of a new Newburgh Road 24" Main along Newburgh Road between Ch	5,247,000	-	653,000		-		-	0%
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	2,367,000	1,844,499			1,844,499		1,844,499	78%
170300	Water Treatment Plant Automation Program	7,801,000		61,000		-		-	0%
170402	Emergency Manned Visual Inspection 84-Inch Transmission Main		156,020			156,020		156,020	100%
122009	Water System Improvements in Joy Road from Southfield Road to Trinity	107,000	106,881			106,881		106,881	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170600	Water Transmission Main Asset Assessment Program	26,133,000	-	2,501,000		-		-	0%
171300	WWP - WTP Sanitary Improvements	488,000	-	45,000		-		-	0%
170117	Instrument Air Compressor Systems Replacement at NE-WTP		226,483			226,483		226,483	100%
7412	SRF WS-693		3,390,974		-	3,390,974		3,390,974	100%
170800	Reservoir Inspection, Design and Rehabilitation at Imlay Station,	19,099,000	-	472,000		-		-	0%
171100	NE - WTP Sanitary Improvements	796,000	-	75,000		-		-	0%
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement	20,500,000	-	4,613,000		-		-	0%
171000	LH - WTP Sanitary Improvements	488,000	-	45,000		-		-	0%
171200	SW - WTP Sanitary Survey Improvements	717,000	-	6,000		-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170100	Allowance: WTP/Pump Station	39,872,000	-	4,296,000		-		-	0%
351001	Water Facility Lighting Renovations			1,172,000		-		-	100%
361002	Data Center Reliability/Availability Improvements		16,080			16,080		16,080	100%
380400	As-needed CIP Implementation Assistance and Related Services			803,000		-		-	100%
380601	Alfred Benesh:General Engineer		674			674		674	100%
380600	General Engineering Services			276,000		-		-	100%
380700	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services			477,000		-		-	100%
170108	DWS-063 Adams Road		625			625		625	100%
Total		**$ 1,684,202,000**	**$ 141,885,761**	**$ 66,038,000**	**$ 17,142,579**	**$ 159,028,340**	**$ 57,057,350**	**$ 216,085,690**	**13%**

WASTEWATER SYSTEM

Percent of Spend Compared to Annual Budget and Capital Improvement Plan (CIP) Requests

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Wastewater System spend for the period ending September 30, 2018 is 84.9% of the FY 2019 prorated budget. Numerous project designs have already and/or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

Wastewater System Projects	FY 2018 Amended Budget	FY 2018 Pre-Close Activity (Unaudited)	FY 2018 Pre-Close as a Percent of Budget (Unaudited)	FY 2019 Amended Budget	FY 2019 Prorated (Three Months)	FY 2019 Pre-Close Activity (Three Months) (Unaudited)	FY 2019 Pre-Close as a Percent of Prorated Budget (Three Months) (Unaudited)
FY 2018 CIP Project Requests	$ 160,746,000	49,043,353	30.5%				
FY 2018 CIP Realigned Forecast as per 2019 CIP	70,632,000	69,567,318	98.5%				
FY 2019 CIP Project Requests				$ 105,183,000	26,295,750	22,315,253	84.9%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Project

Of the total Wastewater System Construction Bond spend for FY 2019 to date, **four projects account for $19.9 million or 89.4% of the total spend**. Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 211001: Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	$ 54,037,000	$ 25,098,344	$ 16,308,000	$ 8,130,505	**36.4%**
Project 212003: Aeration System Improvements	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	$ 47,466,000	$ 26,440,608	$ 15,817,000	$ 7,498,159	**33.6%**
Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II	$ 22,187,000	$ 2,329,474	$ 6,787,000	$ 1,192,024	**5.3%**
Selected Projects as a Percentage of the Total	$ 142,010,000	$ 65,718,970	$ 41,631,000	$ 19,952,440	**89.4%**
Total			**$ 105,183,000**	**$ 22,315,253**	**100%**

The following analysis provides brief highlights related to these projects.

Project 211001–Rehabilitation of Primary Rectangular Clarifiers

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 211001: Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	$ 54,037,000	$ 25,098,344	$ 16,308,000	$ 8,130,505	**36.4%**

Project Engineer/Manager: Nicolas Nicolas
Manager: Philip Kora
Total Project Budget: $54,037,000
Timeline: To be completed by May 2020
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: PC-757 Tooles Contracting Group

Project Description: The Rehabilitation of Primary Rectangular Clarifiers, Drain Lines, Electrical/Mechanical Building, Pipe Gallery, and Replacement of Rake Arm assembly for Circular Primary Clarifiers 15 and 16 at the Water Resource Recovery Facility (WRRF).

Purpose: To improve the operating and maintenance efficiencies that meets the regulatory National Pollution Discharge Elimination (NPDES) Permit and National Electrical code (NEC) requirements.

Status: Rehabilitation of primary rectangular clarifiers 9-12 and primary circular clarifier 15 have been completed and returned to operation. Primary rectangular clarifiers 7 and 8 were released for contract work on September 11, 2018. Primary circular clarifier 16 is undergoing contract rehabilitation work and is expected to be back in operation in November 2018. Once the primary circular clarifier 16 is placed in operation, two additional primary rectangular clarifiers 5 and 6 will be released for Contract work. Parts and equipment continue to be delivered to the site for eventual installation in primary rectangular clarifiers 5, 6, 7 and 8.

Additional Project Manager Comments: As of September 30, 2018. 58% of contract time (Final Completion) has elapsed and 59% of funds have been spent.

FY 2019-2023 CIP Section VII Pages 203-204 for Project 211001–Rehabilitation of Primary Rectangular Clarifiers

CIP Number: 211001
Old CIP No.: 291
Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Project Status Active
Budget: Wastewater
Classification Lvl 1: Wastewater
Classification Lvl 2: WRRF
Classification Lvl 3: Primary Treatment
Project Location: City of Detroit

☐ Innovation
☐ Water MP Right Sizing
☑ Reliability/Redundancy

Project Score



Pipe Gallery

Project Significance: Rehabilitation for meeting NPDES Permit and NEC requirements
Project Engineer/Manager: Nicolas Nicolas
Manager: Philip Kora

Scope of Work: The work to be completed under this project will include installing ventilation and atmospheric control for the pipe gallery; providing new lights and emergency lights, etc.. This work also includes rehabilitation of 12 drain lines from rectangular clarifiers 3-12, circular clarifiers 16 and 16, installation of large manhole with sump pumps to collect drainage and discharge to clarifier, and concrete crack repairs, and rehabilitation work in Electrical/Mechanical Building.

Challenges: N/A - Active

Phase Expenses

PHASE	Construction	Contract No	PC-757	Phase Status	Active
Phase Title	PC-757 Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery				

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Phase Total	12,983	16,107	8,671	6,033	0	0	0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
12,983	16,107	8,671	6,033	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	PC-757
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/18/2016	1217	11/17/2019
Project Closeout	11/18/2019	182	5/18/2020

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CIP Number: 211001

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		10,848	12,097	20,990	7,968					51,903
2019	14	10,229	12,983	16,107	8,671	6,033	0	0	0	54,037

Description of CIP Changes

Project 212003-Aeration System Improvements

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 212003: Aeration System Improvements	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**

Project Engineer/Manager: Vinod Sharma
Manager: Philip Kora
Total Project Budget: $18,320,000
Timeline: To be completed by March 2019
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: CS-1498, CS-157-Metco Services, PC-796-Weiss Construction

Project Description: The Aeration System Improvements will improve the aeration system and provide necessary inter-connections.

Purpose: To increase the efficiency of oxygen used in the High Purity Oxygen (HPO)activated sludge process, reduce the risk of mechanical failures with the replacement/rehabilitation of the Influent and Return Activated Sludge (RAS) valves/pipeline would meet regulatory guidelines to comply with NPDES Permit.

Status: The rehabilitation work associated with Aeration Basin No. 3 and 4 are completed and those basins are put back into operation. The rehabilitation work associated with Aeration Basin No.2 is ongoing.

Additional Project Manager Comments: A change order for extending the contract time by 6 months has been approved by the Board in September 2018.

Additional Construction Accounting & Financial Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Section VII Pages 225-226 for Project 212003-Aeration System Improvements

CIP Number: 212003
Old CIP No.: 1194
Project Title: WRRF Aeration System Improvements

Project Status Active
Budget: Wastewater
Classification Lvl 1: Wastewater
Classification Lvl 2: WRRF
Classification Lvl 3: Secondary Treatment & Disinfe
Project Location: City of Detroit

☐ Innovation
☐ Water MP Right Sizing
☑ Reliability/Redundancy

Project Score


Equipment for aeration system

Project Significance: Improve aeration system and provide necessary inter-connections
Project Engineer/Manager: Kashmira Patel
Manager: Philip Kora
Scope of Work: The scope of work includes study, design, and construction assistance for the oxygen baffle on Bay 10 of A1 & A2 decks, replacement of influent, Return Activated Sludge (RAS) piping, isolation gate and valves for decks Nos. 3 & 4, replace RAS and influent magmeters for Intermediate Lift Pumps (ILP) Nos. 3, 4 & 7. The work also includes replacement of influent gates and operators on Aeration Deck No. 1 & 2.
Challenges: N/A - Under Procurement

Phase Expenses

PHASE	Construction	Contract No	PC-796	Phase Status	Active
Phase Title	PC-796 Aeration System Improvements				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	9,087	2,647	2,502	0	0	0	0

PHASE	Study and Design and Construction Assistance	Contract No	CS-157	Phase Status	Active
Phase Title	CS-157 Aeration System Improvements				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	186	72	21	0	0	0	0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
9,273	2,719	2,523	0	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	PC-796

Construction

Task Name	Start Date	Duration	End Date
Scope Development			

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CIP Number: 212003

Cost Est Class	

Task Name	Start Date	Duration	End Date
Procurement			
Project Execution	10/3/2016	660	7/25/2018
Project Closeout	7/26/2018	60	9/24/2018

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-157
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	2/21/2012	2588	3/24/2019
Project Closeout			

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		2,348	11,197	2,658						16,203
2019	1,903	1,902	9,273	2,719	2,523	0	0	0	0	18,320

Description of CIP Changes: CS- 1498 is changed to CS-157.

Project 212006-Rouge River Outfall Project

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**

Project Engineer/ Manager: Philip Kora and Darrel Field (PMA)
Manager: Philip Kora
Total Project Budget: $18,320,000
Timeline: To be substantially complete by April 2019
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: CS-1781- PMA Consultants and PC-797-CDM Construction

Project Description/Purpose: The Rouge River Outfall Disinfection Project (Phase 2) is MDEQ approved to provide chlorination and de-chlorination to the Rouge River Outfall (RRO) effluent during wet weather events.

Status: Major mechanical work is nearing completion with electrical and controls activities still in progress, leading to the planned start of operational readiness testing in November 2018. New disinfection and dechlorination systems are to be placed into initial service by the end of the year to allow the west chlorine contact conduits to be taken out of service for the final phase of diffuser and flow meters installation before Substantial Completion by April 1, 2019. Site grading, green infrastructure installation and paving are also currently in progress.

Additional Project Manager Comments: The Contractor's most recent schedule shows one month of float, but recent slippage of Contractor activities is consuming some of the float. Nevertheless, on-time completion is anticipated.

Additional Construction Accounting & Financial and Reporting Team Comments: There are no additional comments to provide at this time.

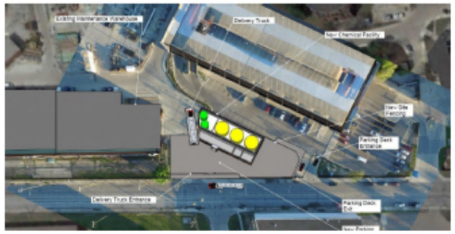
FY 2019-2023 CIP Section VII Pages 231-232 for 212006-Rouge River Outfall Project

CIP Number: 212006
Old CIP No.: 1302
Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Project Status	Active
Budget:	Wastewater
Classification Lvl 1:	Wastewater
Classification Lvl 2:	WRRF
Classification Lvl 3:	Secondary Treatment & Disinfe
Project Location:	City of Detroit

☐ Innovation
☐ Water MP Right Sizing
☑ Reliability/Redundancy

Project Score



Plan view of RRO location

Project Significance: Provide project oversight and design build services for alternative disinfection services to meet NPDES Permit requirements at existing Rouge River Outfall

Project Engineer/Manager: Darrel Field

Manager: Philip Kora

Scope of Work: The consultant shall provide comprehensive professional services for project oversight and Owner's representation for the PC-797 RRO Disinfection Progressive Design-Build Contract. The scope of work consists of completing basis of design, design and construction services to develop and implement a solution that will result in 100% disinfection of wet weather flow discharged from WRRF to Detroit River outfall and Rouge River Outfall in order to meet NPDES Permit requirements.

Challenges: N/A - Under Procurement

Phase Expenses

PHASE	Construction Management	Contract No	CS-1781	Phase Status	Under Procurement
Phase Title	CS-1781 Rouge River Outfall (RRO) Disinfection (Alternative)				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	661	597	156	0	0	0	0

PHASE	Design and Build	Contract No	PC-797	Phase Status	Under Procurement
Phase Title	PC-797 Rouge River Outfall (RRO) Disinfection (Alternative)				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	19,958	15,220	4,001	0	0	0	0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
20,619	15,817	4,157	0	0	0	0

Phase Tasks and Dates

Phase Category	CM
Budget	Wastewater
Phase Status	Under Procurement

Construction Management

Page 231

CIP Number: 212006

Contract No	CS-1781
Cost Est Class	
Phase Category	DB
Budget	Wastewater
Phase Status	Under Procurement
Contract No	PC-797
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Project Execution	2/19/2016	1137	4/1/2019
Project Closeout	4/2/2019	273	12/31/2019

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	729	6,530	15,800	15,520	9,020					47,599
2019	912	5,961	20,619	15,817	4,157	0	0	0	0	47,466

Description of CIP Changes	Change Order No.3 has been issued to the Contractor for the phase 2 work (design completion and construction work) for $38,925,000.

Project 213007–Modifications to Incinerator Sludge Feed Systems in Complex II at WRRF

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II	$ 22,187,000	$ 2,329,474	$ 6,787,000	$ 1,192,024	**5.3%**

Project Engineer/Manager: Chris Breinling
Manager: Philip Kora
Total Project Budget: $22,187,000
Timeline: To be substantially complete in July 2021
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contract/Vendor: GLWA-CON-197 Weiss Construction

Project Description: Modifications to Incinerator Sludge Feed Systems in Complex II at the Water Resource Recovery Facility (WRRF).

Purpose: The project purpose is to replace the belt conveyors that were significantly damaged and removed during the March 2016 fire event that occurred within Complex II at WRRF. The project also provides for significant electrical equipment upgrades that include replacement of a unit substation, motor control centers, and incinerator induction fan starters. New VFD-controlled dual shaft screw conveyors will replace outdated screw conveyors installed on all existing Complex II Incinerators, significantly improving incinerator feed control. Internal painting, instrumentation improvements, SFE strainers, and plumbing upgrades will improve sludge processing operations.

Status: Major painting activities are ongoing within Dewatering Complex II. Structural steel placement for the replacement conveyors commences this month, with major components of the unit substation and motor control centers being slated for replacement in November and December 2018.

Additional Project Manager Comments: As of September 30, 2018, 17% of contract time (Final Completion) has elapsed and 9% of funds have been spent.

Additional Construction Accounting & Financial and Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Section VII Pages 249-250 for 213007-WRRF Modification to Incinerator Sludge Feed Systems at Complex-II

CIP Number: 213007
Old CIP No.: 1311
Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Project Status Active
Budget: Wastewater
Classification Lvl 1: Wastewater
Classification Lvl 2: WRRF
Classification Lvl 3: Residuals Management
Project Location: City of Detroit

☐ Innovation
☐ Water MP Right Sizing
☑ Reliability/Redundancy

Project Score 87.2



Picture from left to right Sludge Conveyer G Damaged by Fire and Conveyer B in the Complex – II Dewatering Building and Fire Damaged Conveyer H in Complex-II Incinerators Building

Project Significance: GLWA have an ongoing study and design of sludge cake conveyance system improvements project after the March 4, 2016 fire incident in Complex –II Incinerators building. The construction of this project will provide a cleaner, fire resistant, reliable and safe sludge feed to the incinerators.

Project Engineer/Manager: Beena Chackunkal
Manager: Ali Khraizat

Scope of Work: The restoration of sludge conveying capacity, which was lost due to the fire damage and to provide improved sludge conveyance from each dewatering facility to the incinerators. Replacement of 19 MCCs and Replacement of the Unit Substation EB-26 in Incineration Complex II.

Challenges: Maintaining the sludge conveyance capacity to meet permit requirements during the construction of these improvements, will be the most significant challenge on this project.

Phase Expenses

PHASE	Construction	Contract No	CON-197	Phase Status	Under Procurement
Phase Title	CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	100	6,685	11,305	3,477	0	0	0

PHASE	Study and Design and Construction Assistance	Contract No		Phase Status	Active
Phase Title	Wastewater Treatment Plant, Lift Station and Wastewater Collection System Structures Allowance				

Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	467	102	51	0	0	0	0

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
567	6,787	11,356	3,477	0	0	0

CIP Number: 213007

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Under Procurement
Contract No	CON-197
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	8/22/2016	430	10/26/2017
Procurement	10/30/2017	172	4/20/2018
Project Execution	4/21/2018	1035	2/19/2021
Project Closeout	2/20/2021	60	4/21/2021

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	8/22/2016	1642	2/19/2021
Project Closeout	2/20/2021	60	4/21/2021

Total Project Expenses (in $1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		1,500	9,600	7,822						18,922
2019			567	6,787	11,356	3,477	0	0	0	22,187

Description of CIP Changes: Additional scope to the previous CIP. Construction of two Small Capital Projects, Replacement of 19 MCCs and Replacement of the unit substation EB-26, were combined with this construction project to avoid multiple shut downs in Incineration Complex II and to coordinate the works more effectively. The estimated cost has also changed.

Construction Work-in-Progress Rollforward

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

The CWIP Rollforward provides a project status for each item.

Future Year:	Project that was included in the CIP with no expenditures (F)
Active:	Project in which procurement process has been initiated and expenditures incurred (A)
Pending Close :	Project that has no projected expenditures for the current fiscal year and has reached substantial completion (PC)
Closed:	Project that has been closed and capitalized (C)

As part of our project life cycle review, the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. The following projects have been identified for FY 2019 capitalization:

- CIP 260113

$**119.2** million is in CWIP as of September 30, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.

Status	Project Count	Total Project Estimated Budget	Percent of Total
Future	26	414,041,000	38.35%
Active	28	496,960,000	46.03%
Pending Close	9	168,683,000	14.62%
Closed	4	-	0.00%
Grand Total	**67**	**1,079,684,000**	**100%**

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2019 Rollforward
Unaudited, Pre-Close Activity For the Fiscal Year Ended September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
211001	Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	$ 54,037,000	$ 25,098,344	$ 16,308,000	$ 8,130,505	$ 33,228,849		$ 33,228,849	61%
212006	PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services	47,466,000	26,440,608	15,817,000	7,498,159	33,938,767		33,938,767	72%
212003	Aeration System Improvements	18,320,000	11,850,544	2,719,000	3,131,752	14,982,295		14,982,295	82%
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	22,187,000	2,329,474	6,787,000	1,192,024	3,521,498		3,521,498	16%
222002	Detroit River Interceptor Evaluation and Rehabilitation	44,425,000	2,647,174	1,084,000	904,090	3,551,264		3,551,264	8%
260603	Conner Creek CSO Basin Rehab		243,224		361,853	605,077		605,077	100%
211004	Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements	27,647,000	24,505,435	2,752,000	316,300	24,821,735		24,821,735	90%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
260502	CSO Outfall Rehab		8,799		274,000	282,799		282,799	100%
211002	Pump Station No. 2 Pumping Improvments	3,783,000	322,436	2,454,000	186,607	509,043		509,043	13%
214001	Relocation of Industrial Waste Division and Analytical Laboratory Operations	12,947,000	572,845	4,001,000	58,476	631,322		631,322	5%
232002	Freud and Connor Creek Pump Station Improvements	32,482,000	5,052,490	1,192,000	57,909	5,110,400	57,734	5,168,134	16%
260602	CSO Fire Alarm System Improvements		-		47,384	47,384		47,384	100%
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	5,425,000	439,040	551,000	34,807	473,847		473,847	9%
260201	Conveyance System Interceptor Rehab		8,912,692		23,368	8,936,059		8,936,059	100%
260604	Baby Creek CSO Rehab		45,791		21,961	67,752		67,752	100%
213004	Biosolids Dryer Facility at WRRF	2,240,000	-	23,000	14,747	14,747	2,408,470	2,423,216	108%
213002	Rehabilitation of Central Offload Facility	19,413,000	982,301	6,447,000	13,214	995,515		995,515	5%
260601	Oakwood Drain Valve Improvements		-		7,006	7,006		7,006	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	31,768,000	1,550,604	12,094,000	5,223	1,555,826		1,555,826	5%
260202	Conveyance System Interceptor Rehab		-		4,746	4,746		4,746	100%
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	12,013,000	12,386	7,000	4,399	16,785		16,785	0%
380601	Alfred Benesh:General Engineer		632		3,832	4,464		4,464	100%
212004	ProjectChlorination/Dechlorination Process Equipment	5,270,000	116,927	2,101,000	3,012	119,939		119,939	2%
211006	Pump Station No. 1 Improvements	24,120,000	88	500,000	3,004	3,092		3,092	0%
215001	Rehabilitation of Combined Sewer Overflow (CSO) Retention Treatment Basins (RTB), Screening		-		2,561	2,561	1,699,489	1,702,050	100%
260605	CSO Faciliaties CA		-		2,390	2,390		2,390	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
331002	Roofing Systems Replacement at GLWA Wastewater Treatment Plant, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities		-	286,000	2,202	2,202		2,202	100%
260107	Pump Station 2 Replacement		-		2,077	2,077		2,077	100%
213006	Improvements to Sludge Feed Pumps at Dewatering Facilities	3,857,000	4,856		1,978	6,834		6,834	0%
213005	Complex I Incinerators Decommissioning and Reusability	4,905,000	42,950		1,975	44,925		44,925	1%
216006	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water	54,456,000	-		1,874	1,874		1,874	0%
260607	Lieb SDF Electrical Improvements		-		1,635	1,635		1,635	100%
233002	Collection System In System Storage Devices(ISDs) Improvements	3,550,000	-	82,000	226	226		226	0%
260606	Puritan Fenkell Roof Replacement		-		71	71		71	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
251002	Wastewater System Wide Instrumentation & Controls Software and Hardware Upgrade	14,048,000	-	877,000	69	69		69	0%
211009	Rehabilitation of the Circular Primary Clarifier Scum Removal System	12,239,000	-		29	29		29	0%
213003	Sewage Sludge Incinerator Air Quality Improvements at WRRF	51,094,000	-			-	36,675,871	36,675,871	72%
212001	Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for	34,090,000	-			-	34,089,672	34,089,672	100%
222001	Intercommunity Relief Sewer Modifications in Detroit Oakwood District	38,000,000	-			-		-	0%
380600	General Engineering Services			51,000		-		-	100%
212005	Rouge River Outfall No. 2 (RRO-2) Segement 1-WWTP Modifications	252,000	-			-	251,881	251,881	100%
222003	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	26,000,000	-			-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
380400	As-needed CIP Implementation Assistance and Related			803,000		-		-	100%
222004	Collection System Valve Remote Operation Structures	2,374,000	-	1,019,000		-		-	0%
260500	CSO Outfall Rehab	44,337,000	-	507,000		-		-	0%
222005	Collection System Access Hatch	2,763,000	-	1,000,000		-		-	0%
213001	Replacement of Belt Filter Presses for Complex I and Upper	36,669,000	-			-	36,669,231	36,669,231	100%
222007	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.	21,003,000	-	4,000		-		-	0%
211005	Pump Station No. 2 Improvements	22,087,000	-			-		-	0%
4824	DWSD-Reha/Replacement		56,280			56,280		56,280	100%
380500	Department-wide General Engineering Services on an As-			114,000		-		-	100%
212007	Rehabilitation of the Secondary Clarifiers	34,805,000	-			-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
260400	Sewage Meter Design, Installation, Replacement and	8,600,000	-	1,700,000		-		-	0%
212008	WRRF Rehabilitation of Intermediate Lift	20,516,000	-			-		-	0%
216001	Underground Electrical Duct Bank Repair and EB-1, EB-2, and EB-10 Primary Power Service Improvements - WRRF	32,669,000	-			-	32,685,875	32,685,875	100%
213008	Rehabilitation of the Wet and Dry Ash Handling Systems	20,616,000	-			-		-	0%
216002	Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection	850,000	-			-	849,278	849,278	100%
211003	Rehabilitation of Primary Clarifiers	2,231,000	-			-		-	0%
260113	Fire Remediation		19,233,711			19,233,711	19,233,711	38,467,421	100%
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	77,749,000	-	10,601,000		-		-	0%
213009	Phosphorous Recovery Facility at the WWRF		3,536			3,536		3,536	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
211007	Replacement of Bar Racks and Grit Collection System at Pump Station	20,563,000	-	7,000		-		-	0%
260203	Inland: Sewer Inspection		4,642,066			4,642,066		4,642,066	100%
260300	Schedule Replacement Program of Critical	11,028,000	-			-		-	0%
216007	DTE Primary Electric 3rd Feed Supply Line to the WRRF	6,669,000	40,186	2,002,000		40,186	543,500	583,686	9%
380900	General Engineering Services			916,000		-		-	100%
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection	25,753,000	-	1,100,000		-		-	0%
212002	Study, Design, & Construction,Management Services for Modified Detroit River Outfall No. 2 - WRRF	10,819,000	10,818,870			10,818,870		10,818,870	100%
232003	Northeast Pump Station Improvements	26,328,000	-			-		-	0%
260600	CSO Facilities Improvements	45,221,000	191,848	9,277,000	(211)	191,638		191,638	0%
Total		**$ 1,079,684,000**	**$ 146,166,135**	**$ 105,183,000**	**$ 22,315,253**	**$ 168,481,388**	**$ 169,244,672**	**$ 337,726,060**	**31%**

Glossary of Acronyms

ACRONYM	DEFINITION	ACRONYM	DEFINITION
CCD	Construction Change Directive	NPDES	National Pollution Discharge Elimination System
CSO	Combined Sewer Overflow	RAS	Return Activated Sludge
CIPP	Cured in Place Pipe Lining	RRO	River Rouge Outfall
DCB	Detailed Cost Breakdown	RTB	Retention Treatment Basin
ESR	Equipment Shutdown Request	SDF	Screening and Disinfection Facility
HPO	High Purity Oxygen	SFE	Screened Final Effluent
ISDs	In System Storage Devices	SPW	Springwells Water Treatment Plant
IWC	Industrial Waste Control	VFD	Variable Frequency Drive
MCC	Motor Control Centers	WRRF	Water Resource Recovery Facility
MDEQ	Michigan Department of Environmental Quality	WTP	Water Treatment Plant
NAB	New Administration Building		
NIEA	North Interceptor East Arm		

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Jill Kosters, Financial Reporting & Accounting Manager

Re: Status Report: FY2019 Continuous Improvement Report

Background: The Continuous Improvement Report provides information related to process improvement programs currently under development and/or facilitation by the Financial Reporting and Accounting Group as of November 30, 2018.

Analysis: There are 15 initiatives that range from 15% complete to those that have been recently completed and are shown as 100%.

All projects are critical to an effective financial and reporting function. Those that will have the most visible outcomes to the Board and other stakeholders include the following.

1. **Finance Automation Solution (FAS):** This project encompasses the selection through implementation of a cloud-based Software as a Solution (SaaS) business intelligence and workflow management tool to integrate with BS&A software. This Business Intelligence tool is to close the gap between the financial system (BS&A) and other systems, to increase the timeliness and quality of reports, analysis, key performance indicators, and dashboards. **Note:** We are currently in negotiations with a vendor selected through a request for proposal, evaluation, and oral interview/live demo process.

2. **E-Payables:** This will provide an interface between BS&A and Comerica Bank for electronic vendor payments. This required software changes by BS&A.
   Note: After preliminary testing, some additional changes are needed by BS&A. It is anticipated that this project will be rolled out in the first half of calendar year 2019.

3. **Utility Billing:** The selected vendor is Capturis. Note: The first phase had a live launch was December 3, 2018 for payment processing via electronic transfer of data files and electronic posting of payments by DTE and Consumer's energy (thereby interacting with one of our largest vendors, DTE).
   Phase 2 will provide management and reporting of data related to energy consumption since January 1, 2016 by meter and location. This will be instrumental in accurately calculating energy savings in the future.

Proposed Action: Receive and file report.

Status Report: FY2019 Continuous Improvement Report

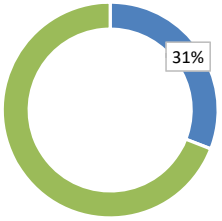
Legend

Proceeding as planned	●	Complete	●
PMO/Program Advisors mitigating	▲	On-Hold	●
Executive Sponsors to address	◆		
To be Completed %		Completed %	

Record Retention

Status: ●

Current Progress:



Project Focus:

*Create FSA Retention Policy in conformity with State of Michigan,Records Management Service requirements

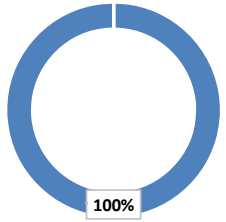
* Research and Create Matrix of FSA document retention requirements, research and select disposal schedule maintenace options.

Partner Team: Information Technology (IT)

Capitalization Policy:

Status: ●

Current Progress:



Project Focus:

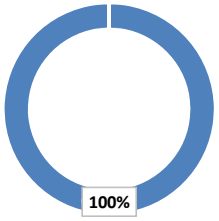
*Create a Capitalization Policy in conformity with GAAP.

*Document the Policy in accordance with the GLWA Policy on Policies

Month End Close

Status: ●

Current Progress:



Project Focus:

*Create procedures in line with established Policies.

*Document Month End Process Workflow .

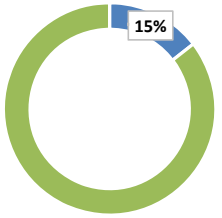
*Creating desktop procedures for future training and new hires.

* Create Presentation Documentation and Training Materials.

Finance Automation Solution

Status: ●

Current Progress:



Project Focus:

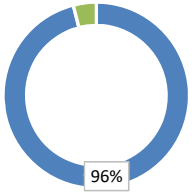
*Develop RFP to provide an Automated Finance Software Solution to improve the efficiency and effectiveness of the FSA operations and increase the timeliness and quality of reports, analysis& KPI

*Selection, Implemention, Configuration and Delivery of SaaS Project **Partner Team: IT and Procurement**

Utility Billing Implementation

Status: ●

Current Progress:



Project Focus:

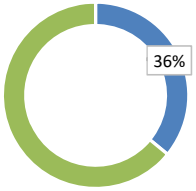
* Evaluate for and Partner with a utility information management service to process utility payments in order to obtain and provide Energy Management with timely , energy consumption and rate information.

Partner Teams: Energy Management and IT

e-Payables Implementation

Status: ●

Current Progress:



Project Focus:

*Evaluate and Partner with a financial institution to provide the vendor community electronic payment options (credit card, wire and ACH)

* Create procedures, processes, documentation and training material in line with our internal control structure.

Partner Team: Treasury

Status Report: FY2019 Continuous Improvement Report

Legend

Proceeding as planned	●	Complete	●
PMO/Program Advisors mitigating	▲	On-Hold	●
Executive Sponsors to address	◆		
To be Completed %		Completed %	

SRF Loan Process

Status: ●

Current Progress: 59%

Project Focus:
* Create procedures and documentation in conformity with Single Audit requirements
* Create desktop procedures for future training and new hires.
*Create and execute processes surrounding SRF loan distributions to our Sub -Recipient: DWSD

BS&A AP Module Reconfiguration

Status: ●

Current Progress: 40%

Project Focus:
*To accommodate Utility Billing and e-Payables, business process must be recalibrated and BS&A software settings reconfigured. There are three new processes that need to be coordinated
*Document changes to workflows and procedures.
Partner Team : IT

Construction Accounting & Financial Reporting Process Mapping

Status: ●

Current Progress: 93%

Project Focus:
*Document Workflows for the CWIP Process, inclusive of touchpoints with other processes and departments.
* Review and Document procedures in line with established Policies.
*Create desktop procedure documents for future training and new employees onboarding

Payroll Process Mapping

Status: ●

Current Progress: 61%

Project Focus:
*Document Payroll Process Workflows.
* Creating procedures in line with established Policies.
* Creating desktop procedures for future training and new employee onboarding.

Financial Reporting Process Mapping

Status: ●

Current Progress: 76%

Project Focus:
* Create Procedures in line with established Policies.
*Document Workflows for Financial Reporting
*Document Procedures for Financial Reporting Process.
*Create desktop procedure documents for future training and new employee onboarding

Accounts Payable(AP) Process Mapping

Status: ●

Current Progress: 45%

Project Focus:
*Document AP Process Workflows.
* Creating procedures in line with established Policies.
* Creating desktop procedures for future training and new employee onboarding.

Status Report : FY2019 Continuous Improvement Report

Legend			
Proceeding as planned		Complete	
PMO/Program Advisors mitigating		On-Hold	
Executive Sponsors to address			
To be Completed %		Completed %	

FP&A O&M (Process Mapping)

Status

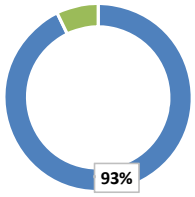
Current Progress

Project Focus:

*Document O&M Process Workflows.

* Creating procedures in line with established Policies.

* Creating desktop procedures for future training and new employee onboarding.



FP&A WRRF ScoreCard

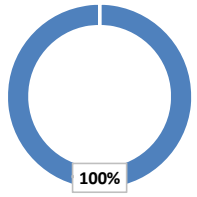
Status

Current Progress

Project Focus:

*Review and update of the WRRF ScoreCard used for reporting to MDEQ.

*Review and update charts for internal reporting needs



Capital Delivery and Shared Service Timekeeping

Status

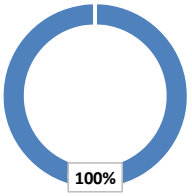
Current Progress

Project Focus:

* Evaluate and select Cloud based timekeeping software to facilitate accurate and timely shared service billing and capital delivery employee overhead allocation.

*Create and Document Workflows

*Create Presentation n and Training Materials.



Projects Managed by other departments where FSA is the Partner Team

Capital Work Processes (Sponsor: AMLT) Coordination of Business, Asset Management and FSA capital discovery for process improvement

BS&A to WAM GL Account Interface Improvements (Sponsor: AMLT) Cleanup of the WAM GL string environment limited to active GL strings, filter upgrade for GL string changes from BS&A into WAM. Future developement Capital String Includion

Ceridian Payroll System Reimplimenation (Sponsor: IT) : Review and reset of system settings and hierarchy to better reflect current GLWA organizational structure , reporting and process

Future Projects

BS&A Employee Reimbursement Process Development

Emergency Response Plan

Completed Projects (within 12 months)

Tracker GL JE for Investment Activity

Excel Based Project Accounting Timesheets

Procure to Pay : Investigative process review

HR-PR Assessment Survey

WAM approval route and title reconfiguration

GLWA
Great Lakes Water Authority

Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Kim Garland, Reporting and Compliance Manager

Re: Detroit Water & Sewerage Department June 30, 2018 Financial Statements

Background: The City of Detroit Water & Sewerage Department (DWSD) financial reports are of interest to Great Lakes Water Authority (GLWA) stakeholders given the nature of the water and sewer system leases, and related financial matters, between DWSD and the GLWA.

Analysis: Recently, the DWSD released the FY 2018 audited annual financial report. Attached is that report along with a summary of audit findings. The annual single audit report has not been received but will be distributed in a future GLWA Audit Committee binder when received.

Proposed Action: Receive and file report.

City of Detroit Water and Sewerage Department

Financial Report
with Supplemental Information
June 30, 2018

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Independent Auditor's Report

To the Board of Water Commissioners, the Honorable
Mayor, and Members of the City Council
City of Detroit Water and Sewerage Department

Report on the Financial Statements

We have audited the accompanying financial statements of the Water Fund and Sewage Disposal Fund of the City of Detroit, Michigan as of and for the year ended June 30, 2018 and the related notes to the financial statements, which collectively comprise the City of Detroit Water and Sewerage Department's (the "DWSD" or the "Department") basic financial statements, as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Water Fund and Sewage Disposal Fund of the City of Detroit, Michigan as of June 30, 2018 and the changes in their financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As described in Note 9 to the financial statements, effective January 1, 2016, the City of Detroit, Michigan entered into lease agreements and related service agreements with the Great Lakes Water Authority (GLWA) under which GLWA will operate the regional water and sewage system for the term of 40 years. The final negotiations of the transaction during the year have resulted in the recognition of a special item (bifurcation gain) in the statement of revenue, expenses, and changes in net position. Our opinion is not modified with respect to this matter.

To the Board of Water Commissioners, the Honorable
Mayor, and Members of the City Council
City of Detroit Water and Sewerage Department

We draw attention to Note 1, which explains that these financial statements present only the Water Fund and Sewage Disposal Fund and do not purport to, and do not, present fairly the financial position of the City of Detroit, Michigan as of June 30, 2018 or the changes in its financial position and the changes in its cash flows, where applicable, for the year then ended in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Required Supplemental Information

Accounting principles generally accepted in the United States of America require that the pension system schedules and other postemployment benefits schedules, as identified in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, which considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplemental information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted the management's discussion and analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, which considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic financial statements is not affected by this missing information.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 14, 2018 on our consideration of the City of Detroit, Michigan's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City of Detroit, Michigan's internal control over financial reporting and compliance.

Plante & Moran, PLLC

December 14, 2018

City of Detroit Water and Sewerage Department

Statement of Net Position

June 30, 2018

	Water Fund	Sewage Disposal Fund	Total
Assets			
Current assets:			
Cash	$ 67,327,736	$ 79,749,585	$ 147,077,321
Receivables:			
Customer receivables	11,369,572	54,325,524	65,695,096
Unbilled accounts receivable	6,563,961	18,109,862	24,673,823
Other receivables	950,843	1,001,793	1,952,636
Receivable from Great Lakes Water Authority	21,596,509	21,779,001	43,375,510
Due from city funds	77,886	1,039,789	1,117,675
Due from other funds	1,530,464	-	1,530,464
Inventory	3,380,693	848,085	4,228,778
Prepaid expenses and other assets	671,548	423,960	1,095,508
Total current assets	113,469,212	177,277,599	290,746,811
Noncurrent assets:			
Restricted cash and investments (Note 3)	45,800,589	6,674,626	52,475,215
Capital assets: (Note 4)			
Assets not subject to depreciation	19,984,840	20,196,675	40,181,515
Assets subject to depreciation - Net	505,924,286	471,785,038	977,709,324
Receivable from Great Lakes Water Authority	464,081,185	584,770,555	1,048,851,740
Net OPEB asset	5,805	8,615	14,420
Total noncurrent assets	1,035,796,705	1,083,435,509	2,119,232,214
Total assets	1,149,265,917	1,260,713,108	2,409,979,025
Deferred Outflows of Resources			
Deferred pension costs (Note 8)	8,802,741	6,373,569	15,176,310
Deferred OPEB costs	6,471	9,598	16,069
Total deferred outflows of resources	8,809,212	6,383,167	15,192,379
Liabilities			
Current liabilities:			
Accounts payable	5,887,061	7,853,448	13,740,509
Due to Great Lakes Water Authority	-	53,639,106	53,639,106
Due to city funds	9,543,619	281,072	9,824,691
Due to other funds	-	1,530,464	1,530,464
Deposits	4,169,244	-	4,169,244
Accrued liabilities and other	18,488,692	28,604,987	47,093,679
Due to fiduciary funds of the City of Detroit, Michigan	2,098,267	3,777,094	5,875,361
Unearned revenue	11,250,000	13,750,000	25,000,000
Current portion of advance from the City of Detroit General Fund	286,271	477,119	763,390
Accrued interest	1,941,491	3,169,374	5,110,865
Current portion of compensated absences (Note 5)	929,079	1,393,619	2,322,698
Accrued workers' compensation and claims and judgments (Note 7)	910,000	276,000	1,186,000
Current portion of bonds payable and contractual obligations (Note 5)	13,560,087	11,253,800	24,813,887
Total current liabilities	69,063,811	126,006,083	195,069,894
Noncurrent liabilities:			
Advance from the City of Detroit General Fund	2,630,264	4,383,772	7,014,036
Compensated absences - Net of current portion (Note 5)	746,446	1,119,669	1,866,115
Accrued workers' compensation and claims and judgments - Net of current portion (Note 7)	5,978,199	13,330,600	19,308,799
Net pension liability (Note 8)	46,948,714	32,618,179	79,566,893
Bonds payable and contractual obligations - Net of current portion (Note 5)	503,579,521	379,807,960	883,387,481
Total noncurrent liabilities	559,883,144	431,260,180	991,143,324
Total liabilities	628,946,955	557,266,263	1,186,213,218

See notes to financial statements.

Statement of Net Position (Continued)

June 30, 2018

	Water Fund	Sewage Disposal Fund	Total
Deferred Inflows of Resources			
Deferred pension cost reductions (Note 8)	$ 1,563,303	$ 2,239,720	$ 3,803,023
Deferred OPEB cost reductions	598	886	1,484
Total deferred inflows of resources	1,563,901	2,240,606	3,804,507
Net Position			
Net investment in capital assets	77,925,315	146,328,039	224,253,354
Restricted:			
Budget stabilization	2,000,000	5,500,000	7,500,000
Water affordability	1,184,871	-	1,184,871
Unrestricted	446,454,087	555,761,367	1,002,215,454
Total net position	**$ 527,564,273**	**$ 707,589,406**	**$ 1,235,153,679**

See notes to financial statements.

City of Detroit Water and Sewerage Department

Statement of Revenue, Expenses, and Changes in Net Position

Year Ended June 30, 2018

	Water Fund	Sewage Disposal Fund	Total
Operating Revenue			
Water sales and sewage disposal charges	$ 93,733,202	$ 267,396,005	$ 361,129,207
Nonretail shared services and other Great Lakes Water Authority revenue	17,102,163	13,145,283	30,247,446
Penalties and fees	3,441,349	5,089,230	8,530,579
Miscellaneous	743,155	5,500,295	6,243,450
Total operating revenue	115,019,869	291,130,813	406,150,682
Operating Expenses			
Salaries, wages, and benefits	44,955,963	39,953,349	84,909,312
Contractual services	16,924,568	18,831,240	35,755,808
Wholesale charges	15,130,600	178,969,200	194,099,800
Operating	2,535,693	5,265,322	7,801,015
Operating supplies	2,674,110	612,153	3,286,263
Repairs and maintenance	2,522,006	2,921,580	5,443,586
Utilities	1,193,021	2,322,990	3,516,011
Shared services	4,053,375	6,023,573	10,076,948
Miscellaneous	59,717	2,721,151	2,780,868
Claims and judgments	283,920	4,534,292	4,818,212
Bad debt	(1,939,835)	6,814,523	4,874,688
Depreciation	17,811,923	13,353,850	31,165,773
Total operating expenses	106,205,061	282,323,223	388,528,284
Operating Income	8,814,808	8,807,590	17,622,398
Nonoperating Revenue (Expense)			
Investment income	325,700	-	325,700
Interest revenue on lease with Great Lakes Water Authority	16,887,599	20,639,995	37,527,594
Principal forgiveness on state revolving fund loans	2,534,779	-	2,534,779
Miscellaneous	5,875,157	1,811,787	7,686,944
Interest expense, net of capitalized interest	(23,918,360)	(17,789,190)	(41,707,550)
Total nonoperating revenue	1,704,875	4,662,592	6,367,467
Special Item - Bifurcation (Note 9)	35,482,690	66,377,234	101,859,924
Change in Net Position	46,002,373	79,847,416	125,849,789
Net Position - Beginning of year	481,561,900	627,741,990	1,109,303,890
Net Position - End of year	**$ 527,564,273**	**$ 707,589,406**	**$ 1,235,153,679**

See notes to financial statements.

City of Detroit Water and Sewerage Department

Statement of Cash Flows

Year Ended June 30, 2018

	Water Fund	Sewage Disposal Fund	Total
Cash Flows from Operating Activities			
Receipts from customers	$ 118,827,769	$ 282,925,517	$ 401,753,286
Receipts from (payments to) interfund services and reimbursements	7,620,597	(7,620,597)	-
Receipts from (payments to) city funds	21,488,791	(6,887,090)	14,601,701
Payments to suppliers	(64,019,897)	(197,082,681)	(261,102,578)
Payments to employees and fringes	(42,117,501)	(35,420,519)	(77,538,020)
Claims paid	(1,541,757)	(163,739)	(1,705,496)
Other receipts	1,515,790	-	1,515,790
Payments from GLWA	7,824,471	10,798,002	18,622,473
Net cash and cash equivalents provided by operating activities	49,598,263	46,548,893	96,147,156
Cash Flows from Noncapital Financing Activities			
Loans received from other funds	2,916,535	4,860,891	7,777,426
Receipts from GLWA for financial recovery bonds	963,936	2,167,972	3,131,908
Principal and interest paid on operating debt	(4,559,508)	(7,599,176)	(12,158,684)
Receipts on GLWA contract receivable	22,500,000	27,500,000	50,000,000
Net cash and cash equivalents provided by noncapital financing activities	21,820,963	26,929,687	48,750,650
Cash Flows from Capital and Related Financing Activities			
Issuance of bonds	9,529,927	-	9,529,927
Purchase of capital assets	(28,717,653)	(19,322,459)	(48,040,112)
Principal and interest paid on capital debt	(34,583,213)	(26,767,600)	(61,350,813)
Payments from GLWA	5,077,804	15,174,200	20,252,004
Net cash and cash equivalents used in capital and related financing activities	(48,693,135)	(30,915,859)	(79,608,994)
Cash Flows from Investing Activities			
Interest received on investments	325,700	-	325,700
Receipts from renting activities	7,684	17,642	25,326
Net cash and cash equivalents provided by investing activities	333,384	17,642	351,026
Net Increase in Cash and Cash Equivalents	23,059,475	42,580,363	65,639,838
Cash and Cash Equivalents - Beginning of year	90,068,850	43,843,848	133,912,698
Cash and Cash Equivalents - End of year	**$ 113,128,325**	**$ 86,424,211**	**$ 199,552,536**
Classification of Cash and Cash Equivalents			
Cash and investments	$ 67,327,736	$ 79,749,585	$ 147,077,321
Restricted cash	45,800,589	6,674,626	52,475,215
Total cash and cash equivalents	**$ 113,128,325**	**$ 86,424,211**	**$ 199,552,536**

See notes to financial statements.

Statement of Cash Flows (Continued)

Year Ended June 30, 2018

	Water Fund	Sewage Disposal Fund	Total
Reconciliation of Operating Income to Net Cash and Cash Equivalents from Operating Activities			
Operating income	$ 8,814,808	$ 8,807,590	$ 17,622,398
Adjustments to reconcile operating income to net cash and cash equivalents from operating activities:			
Depreciation and amortization	17,811,923	13,353,850	31,165,773
Changes in assets and liabilities:			
Receivables	(7,284,533)	(1,775,498)	(9,060,031)
Due to and from other funds	7,620,597	(7,620,597)	-
Due to and from city funds	21,488,791	(6,887,090)	14,601,701
Inventories	790,732	205,801	996,533
Prepaid and other assets	(392,015)	(254,232)	(646,247)
Accrued liabilities and other	15,483,336	26,422,184	41,905,520
Accounts payable	(18,527,285)	27,687,555	9,160,270
Estimated claims liability	2,929,390	(13,600,783)	(10,671,393)
Pension and OPEB, including related deferred inflows and outflows	(653,271)	210,113	(443,158)
Deposits	1,515,790	-	1,515,790
Total adjustments	40,783,455	37,741,303	78,524,758
Net cash and cash equivalents provided by operating activities	**$ 49,598,263**	**$ 46,548,893**	**$ 96,147,156**

See notes to financial statements.

Note 1 - Nature of Business and Significant Accounting Policies

Reporting Entity

The City of Detroit, Michigan (the "City") Charter established the Detroit Water and Sewerage Department (the "DWSD" or the "Department") in 1836 to supply water, drainage, and sewage services within and outside the City. The Department is governed by a seven-member Board of Water Commissioners (the "Board") that is appointed by the mayor of the City of Detroit, Michigan. In accordance with government accounting principles, there are no separate legal entities to be reported within these financial statements. The financial statements of the Department have been included in the City's Comprehensive Annual Financial Report and reported as enterprise funds. These financial statements represent the financial condition and the results of operations of the Department only and do not purport to, and do not, present fairly the financial position of the City. Copies of these reports, along with other financial information, can be obtained at the Department's administrative office located at 735 Randolph, Detroit, MI 48226 and on its website at www.detroitmi.gov/dwsd.

The Board's governance structure, authority, and level of operational autonomy is established by five standing federal court orders dated September 9, 2011 (Creation of the Root Cause Committee); November 4, 2011 (Adoption of the Root Cause Committee Plan of Action); October 5, 2012 (Clarification of the November 4, 2011 Order); December 14, 2012 (Adoption of Root Cause Committee's Plan of Action Clarification); and December 15, 2015 (Opinion & Order on Joint Motion for Relief of Judgment). These court orders resulted largely from federal court oversight of the DWSD for most of the period from May 6, 1977 through March 27, 2013 related to alleged violations of the Clean Water Act and its National Pollutant Discharge Elimination System (NPDES) permit. The final court order reiterated that the court retains limited jurisdiction for the purpose of enforcement of its orders issued on September 9, 2011, November 4, 2011, October 5, 2012, December 14, 2012, and December 15, 2015.

Authority granted by the federal court to the DWSD includes operational independence in the areas of law, finance, human resources, and procurement. Specifically, while they restored some provisions in the Charter relating to the appointment and removal of members of the Board, these orders enjoined the City from applying any existing or future charter provisions, ordinances, resolutions, executive orders, city policies, regulations, procedures, or similar rules or practices that are inconsistent with the express terms of the court's orders. Furthermore, the orders granted the DWSD the authority to: purchase its own information technology systems; establish its own subunits and programs within its finance division, including debt management, accounts payable, accounts receivable, accounting, budget, and to establish new rates and charges; treasury and cash management, asset management, and deferred compensation; independence from city finance policies; be exempt from the application of city ordinances, the City's human resources policies and regulations, Civil Service Commission Rules, and city resolutions and orders, pertaining to payroll, employee benefits, and employee and labor relations; establish bank accounts in its own name; and establish its own self-insurance fund.

Effective January 1, 2016, the City of Detroit, Michigan entered into lease agreements and related service agreements with the Great Lakes Water Authority (GLWA) under which GLWA will operate the regional water and sewage system for the term of 40 years (with automatic extension to coincide with any debt still outstanding that was issued to finance system improvements). The agreements transfer all then-outstanding bonded indebtedness to GLWA, along with a leasehold interest in certain capital assets, cash, investments, and receivables in exchange for an annual lease payment of $50 million.

The GLWA bonds are supported by a pledge of the revenue of both the regional system and local system revenue. Its master bond ordinance requires collections of the Department's water and sewer receipts to be deposited into trust accounts controlled by the master bond ordinance (through GLWA), which will be used to fund wholesale operation and maintenance costs, debt principal and interest, pension obligations, the Water Residential Assistance Program, and the budget stabilization fund, after distributing cash sufficient to cover the local operation and maintenance costs to the Department; any remaining monies are transferred to an improvement and extension fund.

Note 1 - Nature of Business and Significant Accounting Policies (Continued)

Accounting and Reporting Principles

The City of Detroit Water and Sewerage Department follows accounting principles generally accepted in the United States of America (GAAP), as applicable to governmental units. Accounting and financial reporting pronouncements are promulgated by the Governmental Accounting Standards Board. The following is a summary of the significant accounting policies used by the Department:

Fund Accounting

The Department accounts for its activities in two different funds - the Water Fund and Sewage Disposal Fund - in order to demonstrate accountability for how it has spent its resources.

Proprietary Funds

Proprietary funds include enterprise funds (which provide goods or services to users in exchange for charges or fees). The Department reports the following two funds:

- The Water Fund accounts for the operations of the water distribution system. The fund provides services to retail customers located in the City of Detroit, Michigan.
- The Sewage Disposal Fund accounts for the operations of the sewers, including sanitary and combined sewers. The fund provides services to retail customers located in the City of Detroit, Michigan.

Report Presentation

This report includes the fund-based statements of the Department. In accordance with government accounting principles, a government-wide presentation with program and general revenue is not applicable to special purpose governments engaged only in business-type activities.

Basis of Accounting

The Water Fund and Sewage Disposal Fund use the economic resources measurement focus and the full accrual basis of accounting. Revenue is recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Nonexchange revenue (grants and contributions) are recognized when all eligibility requirements have been satisfied (generally based on reimbursements of amounts spent).

Specific Balances and Transactions

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, demand deposits, and short-term investments with a maturity of three months or less when acquired.

Investments

Investments are reported at fair value or estimated fair value based on quoted market prices.

Receivables

All customer receivables are shown net of allowance for uncollectible amounts of $21,014,086 and $62,315,426 in the Water Fund and Sewage Disposal Fund, respectively.

Inventories and Prepaid Items

Inventories consist of operating and maintenance and repair parts for water and sewer assets and are valued at the lower of cost or market, with cost being determined on an average cost method. Inventory is recorded as expenditures when consumed rather than when purchased. Certain payments to vendors reflect costs applicable to future fiscal years and are recorded as prepaid items.

Note 1 - Nature of Business and Significant Accounting Policies (Continued)

Capital Assets

Capital assets are recorded at historical cost, together with interest capitalized during construction. Capital assets are defined by the Department as assets with an initial individual cost of more than $5,000 and an estimated useful life in excess of one year. All acquisitions of land and land improvements are capitalized, regardless of cost. Donated capital assets are recorded at estimated acquisition value at the date of donation.

Infrastructure, buildings, equipment, and vehicles are depreciated using the straight-line method over the following useful lives:

	Depreciable Life - Years
Land improvements	67
Buildings and structures	40
Distribution mains	67
Services and meters	20-67
Sewers	67-100
Machinery, equipment, and fixtures	3-20

The Department capitalizes qualifying net interest costs of the system on bonds issued for capital construction in accordance with GASB Statement No. 62, *Capitalization of Interest Cost*, as amended. Accordingly, capitalized interest for the year ended June 30, 2018 was $803,195 for the Water Fund. There was no capitalized interest recognized in the Sewage Disposal Fund for the year ended June 30, 2018.

Construction in progress is related to buildings, improvements, or infrastructure that has not yet been placed in service for the intended use. These costs include contract costs (materials, labor, and overhead), as well as professional fees and interest, incurred during the construction period. Upon completion, construction in progress costs are transferred to the appropriate capital asset classification. A periodic review of projects included in construction in progress identified projects that were suspended or canceled during the period. These identified projects were removed from construction in progress and recorded as operations and maintenance costs.

Taxes and City Services

The Department pays no direct federal, state, or local taxes, except local taxes on excess property and federal Social Security taxes. The Department reimburses the City for most of the direct services furnished by other city departments, including general staff services. Charges are billed for all water and sewerage services provided to city departments.

Shared Costs

Costs related to shared facilities and personnel are allocated to the Department on a basis that relates costs incurred to the fund benefited.

Unearned Revenue

The Department received a lease prepayment from GLWA in the amount of $25,000,000 on January 1, 2016. Of the $25,000,000, $11,250,000 is allocated to the Water Fund and $13,750,000 is allocated to the Sewage Disposal Fund. The lease prepayment will be applied against the lease receivable from GLWA in the period from July 1, 2055 through December 31, 2055.

Note 1 - Nature of Business and Significant Accounting Policies (Continued)

Advance from the City of Detroit General Fund

In 2018, the governing body of the City of Detroit, Michigan authorized the use of general funds for the full redemption of the General Obligation Bonds, 2014 Series C, including the amount allocated to the Department. The 2014 Series C debt was fully redeemed on April 13, 2018. The Department will repay the City of Detroit General Fund under the terms of the original amortization schedule for the General Obligation Bonds, 2014 Series C, including an interest rate of 5 percent per year, with principal and interest due on June 30 each year, and a final maturity date of June 30, 2027. The total amount advanced to the Department was $7,777,426, of which $2,916,535 is recorded in the Water Fund and $4,860,891 is recorded in the Sewage Disposal Fund. Of the total amounts, $286,271 and $477,119 are classified as current liabilities in the Water Fund and Sewage Disposal Fund, respectively.

Compensated Absences

The liability for compensated absences reported in the basic financial statements consists of unpaid accumulated vacation and sick leave balances. The liability has been calculated using the vesting method, in which leave amounts for both employees who are currently eligible to receive termination payments and other employees who are expected to become eligible in the future to receive such payments upon termination are included. Vacation leave is accrued as benefits are earned by employees, and it is probable that the City will compensate the employees for the benefits through paid time off or other means, such as cash payments at termination or retirement. The liability has been calculated based on employees' current salary level and includes salary-related costs (e.g., Social Security and Medicare tax). The current year accruals are based on estimates, and payments are based on actuals.

Bond Premiums, Discounts, and Deferred Amounts on Refunding

Bond premiums and discounts are amortized using the effective interest method, and deferred amounts on refunding are amortized using the straight-line method over the life of the bonds. Bonds payable are reported net of the applicable bond premium and discounts. Deferred amounts on refunding are reported as deferred outflows and deferred inflows of resources.

Long-term Obligations

In accordance with contractual agreements with GLWA, the Department continues to be responsible for funding its share of the GLWA bonds that are estimated to have been used to improve the local DWSD system. The Department has been assigned a portion of the City of Detroit, Michigan's financial recovery bonds, which had been used to fund prebankruptcy operating obligations. There are also outstanding revenue bonds and state revolving fund loans at year end. All of these amounts are reported as long-term obligations in the statement of revenue, expenses, and changes in net position.

Other Postemployment Benefits

The City of Detroit provides death benefits through a prefunded single-employer defined benefit plan administered by the Employee Benefit Board of Trustees. Beginning in fiscal year 2018, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions*, requires governments providing defined benefit postemployment benefits (other than pensions) to recognize the net OPEB asset or liability on their financial statements. The OPEB asset or liability is the difference between the total OPEB liability and the plan's fiduciary net position. At June 30, 2018, the City of Detroit allocated a net OPEB asset to the Water Fund and Sewage Disposal Fund in the amount of $5,805 and $8,615, respectively.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to a future period and so will not be recognized as an outflow of resources (expense) until then.

Note 1 - Nature of Business and Significant Accounting Policies (Continued)

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

The Department reports the following deferred outflows of resources and deferred inflows of resources:

	Outflows	Inflows
Deferred pension costs (or cost reductions)	✓	✓
Deferred OPEB costs (or cost reductions)	✓	✓

Net Position

The Department's net position is categorized as follows:

Net Investment in Capital Assets

This consists of capital assets, net of accumulated depreciation and capital-related debt.

Restricted

The net position has been legally restricted by outside parties or by law through constitutional provisions or enabling legislation.

Unrestricted

This consists of assets that do not meet the definition of "restricted" or "net investment in capital assets."

Net Position Flow Assumption

Sometimes, the Department will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the Department's financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the Department's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

Unbilled Revenue

The Department records unbilled revenue for services provided by the DWSD prior to year end by accruing actual revenue billed in the subsequent month.

Interest Expense

Interest expense in the statement of revenue, expenses, and changes in net position includes amounts related to the portion of rates and charges collected by the DWSD that relate to the accretion of obligations payable to the Great Lakes Water Authority in respect to the interest payable on GLWA's bonds and interest paid and accrued on outstanding financial recovery bonds, revenue bonds, and state revolving fund loans.

Classification of Revenue and Expenses

The Department classifies its revenue and expenses as either operating or nonoperating.

Operating revenue includes activities that have the characteristics of exchange transactions, such as revenue from charges for water service and sewerage services.

Nonoperating revenue includes activities that have the characteristics of nonexchange transactions, such as contributions and investment income.

Note 1 - Nature of Business and Significant Accounting Policies (Continued)

Operating expenses include the costs of operating the water and sewer utility systems, administrative expenses, and depreciation on capital assets. All expenses not meeting this definition, including interest expense, are reported as nonoperating expenses.

Use of Estimates

The preparation of basic financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the basic financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates

Upcoming Accounting Pronouncements

In November 2016, the Governmental Accounting Standards Board issued GASB Statement No. 83, *Certain Asset Retirement Obligations*, which establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for asset retirement obligations. The Department is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Department's financial statements for the 2019 fiscal year.

In June 2017, the Governmental Accounting Standards Board issued GASB Statement No. 87, *Leases*, which improves accounting and financial reporting for leases by governments. This statement requires recognition of certain lease assets and liabilities for leases that were previously classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The Department is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Department's financial statements for the year ending June 30, 2021.

In March 2018, the GASB issued Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements.* This statement establishes criteria to improve the information that is disclosed in the notes to the government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. The Department is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for the Department's financial statements for the year ending June 30, 2019.

In June 2018, the GASB issued Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period,* which simplifies accounting for interest cost incurred before the end of construction and requires those costs to be expensed in the period incurred. As a result, interest cost incurred before the end of a construction period will not be capitalized and included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. This statement also reiterates that, in financial statements prepared using the current financial resources measurement focus, interest cost incurred before the end of a construction period should be recognized as an expenditure on a basis consistent with governmental fund accounting principles. The requirements of the standard will be applied prospectively and result in increased interest expense during periods of construction. The provisions of this statement are effective for the Department's financial statements for the June 30, 2021 fiscal year.

Note 2 - Deposits and Investments

Deposits and investments are reported in the financial statements as follows:

	Water Fund	Sewage Disposal Fund	Total
Cash - Unrestricted	$ 67,327,736	$ 79,749,585	$ 147,077,321
Restricted cash	45,800,589	6,674,626	52,475,215
Total cash and investments	$ 113,128,325	$ 86,424,211	$ 199,552,536

Michigan Compiled Laws Section 129.91 (Public Act 20 of 1943, as amended) authorizes local governmental units to make deposits and invest in the accounts of federally insured banks, credit unions, and savings and loan associations that have offices in Michigan. The law also allows investments outside the state of Michigan when fully insured. The local unit is allowed to invest in bonds, securities, and other direct obligations of the United States or any agency or instrumentality of the United States; repurchase agreements; bankers' acceptances of United States banks; commercial paper rated within the two highest classifications, which matures not more than 270 days after the date of purchase; obligations of the State of Michigan or its political subdivisions, which are rated as investment grade; and mutual funds composed of investment vehicles that are legal for direct investment by local units of government in Michigan.

There are no limitations or restrictions on participant withdrawals for the investment pools that are recorded at amortized cost.

The Department's cash and investments are subject to several types of risk, which are examined in more detail below:

Custodial Credit Risk of Bank Deposits

Custodial credit risk is the risk that, in the event of a bank failure, the Department's deposits may not be returned to it. The Department does not have a deposit policy for custodial credit risk. At year end, the Department had $122,731,811 of bank deposits (certificates of deposit and checking and savings accounts) that were uninsured and uncollateralized. The Department believes that, due to the dollar amounts of cash deposits and the limits of FDIC insurance, it is impractical to insure all deposits. As a result, the Department evaluates each financial institution with which it deposits funds and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Custodial Credit Risk of Investments

Custodial credit risk is the risk that, in the event of the failure of the counterparty, the Department will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The Department does not have a policy for custodial credit risk. As of June 30, 2018, the Department had no investments subject to custodial credit risk.

Interest Rate Risk

Interest rate risk is the risk that the value of investments will decrease as a result of a rise in interest rates. The Department's investment policy does not restrict investment maturities other than commercial paper, which can only be purchased with a 270-day maturity. At year end, the Department had no investments subject to interest rate risk.

Note 2 - Deposits and Investments (Continued)

Credit Risk

State law limits investments in commercial paper to the top two ratings issued by nationally recognized statistical rating organizations. The Department has no investment policy that would further limit its investment choices. As of year end, the Department had no investments subject to credit risk.

Note 3 - Restricted Assets

Restricted assets, principally cash and investments, are primarily available to provide funds for construction. The budget stabilization fund monies are also restricted in accordance with GLWA's master bond ordinance.

At June 30, 2018, the restricted assets are as follows:

	2018		
Description	Water Fund	Sewage Disposal Fund	Total
Budget stabilization fund - Held in trust in accordance with the master bond ordinance	$ 2,000,000	$ 5,500,000	$ 7,500,000
Donations, restricted for specified purposes	1,184,871	-	1,184,871
Unspent bond proceeds	42,615,718	1,174,626	43,790,344
Total	$ 45,800,589	$ 6,674,626	$ 52,475,215

Note 4 - Capital Assets

Capital asset activity of the Department for the year ended June 30, 2018 was as follows:

	Balance July 1, 2017	Reclassifications and Adjustments	Additions	Disposals	Balance June 30, 2018
Water Fund					
Capital assets not being depreciated:					
Land and land rights	$ 1,327,637	$ -	$ -	$ -	$ 1,327,637
Construction in progress	9,433,741	(19,492,301)	28,717,653	(1,890)	18,657,203
Subtotal	10,761,378	(19,492,301)	28,717,653	(1,890)	19,984,840
Capital assets being depreciated:					
Mains	505,785,367	12,250,437	-	-	518,035,804
Buildings and structures	55,426,096	99,362	-	-	55,525,458
Machinery, equipment, and fixtures	83,198,366	5,456,246	-	(1,371,960)	87,282,652
Land improvements	4,791,365	-	-	-	4,791,365
Services	48,981,409	-	-	-	48,981,409
Meters	126,143,066	1,686,256	-	-	127,829,322
Subtotal	824,325,669	19,492,301	-	(1,371,960)	842,446,010
Accumulated depreciation:					
Mains	133,167,217	-	7,513,884	-	140,681,101
Buildings and structures	41,943,281	-	795,514	-	42,738,795
Machinery, equipment, and fixtures	44,488,763	-	3,578,397	(1,358,477)	46,708,683
Land improvements	1,084,337	-	83,533	-	1,167,870
Services	30,095,408	-	598,924	-	30,694,332
Meters	69,289,272	-	5,241,671	-	74,530,943
Subtotal	320,068,278	-	17,811,923	(1,358,477)	336,521,724
Net capital assets being depreciated	504,257,391	19,492,301	(17,811,923)	(13,483)	505,924,286
Net water fund capital assets	515,018,769	-	10,905,730	(15,373)	525,909,126

Note 4 - Capital Assets (Continued)

	Balance July 1, 2017	Reclassifications and Adjustments	Additions	Disposals	Balance June 30, 2018
Sewage Disposal Fund					
Capital assets not being depreciated:					
Land and land rights	$ 72,326	$ -	$ -	$ -	$ 72,326
Construction in progress	10,169,656	(9,367,766)	19,322,459	-	20,124,349
Subtotal	10,241,982	(9,367,766)	19,322,459	-	20,196,675
Capital assets being depreciated:					
Sewer lines and laterals	393,546,502	6,982,517	-	-	400,529,019
Buildings and structures	108,243,866	143,251	-	-	108,387,117
Machinery, equipment, and fixtures	108,768,926	152,994	-	(1,651,695)	107,270,225
Land improvements	6,891,883	2,089,004	-	-	8,980,887
Subtotal	617,451,177	9,367,766	-	(1,651,695)	625,167,248
Accumulated depreciation:					
Sewer lines and laterals	41,211,177	-	4,152,321	-	45,363,498
Buildings and structures	47,183,217	-	3,522,471	-	50,705,688
Machinery, equipment, and fixtures	51,995,596	-	5,562,907	(1,639,283)	55,919,220
Land improvements	1,277,653	-	116,151	-	1,393,804
Subtotal	141,667,643	-	13,353,850	(1,639,283)	153,382,210
Net capital assets being depreciated	475,783,534	9,367,766	(13,353,850)	(12,412)	471,785,038
Net sewage disposal fund capital assets	486,025,516	-	5,968,609	(12,412)	491,981,713
Net department capital assets	$ 1,001,044,285	$ -	$ 16,874,339	$ (27,785)	$ 1,017,890,839

Construction in progress and water main additions in the Water Fund include $803,195 of interest costs that have been capitalized as part of the cost of assets.

Construction Commitments

The Department is engaged in numerous projects that are part of its five-year capital improvement program, including water main replacements, fire hydrant replacements, sewer system rehabilitation, vehicle and equipment purchases, and information technology upgrades. The program is being financed primarily from revenue of the funds and proceeds from the issuance of revenue bonds by the Great Lakes Water Authority. The total amount of construction contract commitments outstanding at June 30, 2018 was approximately $133 million and $80 million for the Water Fund and Sewage Disposal Fund, respectively.

Note 5 - Long-term Debt

Long-term debt activity of the Department for the year ended June 30, 2018 is summarized as follows:

	Interest Rate Ranges	Principal Maturity Ranges	Balance June 30, 2017	Additions	Reductions	Balance June 30, 2018	Due within One Year
Water fund obligations payable and long-term debt:							
Obligation payable to GLWA	4.76%	$13,192,900 - 31,918,900	$464,029,779	$ -	$(38,696,279)	$425,333,500	$13,192,900
Financial recovery bonds	4-6%	$1,327,004	29,729,253	-	(3,189,174)	26,540,079	-
Revenue bonds	5%	$3,205,000 - 7,260,000	50,740,000	-	-	50,740,000	-
State revolving loans	2.5%	$95,000 - 279,000	1,268,474	9,529,928	(2,534,779)	8,263,623	231,400
Total principal outstanding on obligations payable and long-term debt			545,767,506	9,529,928	(44,420,232)	510,877,202	13,424,300
Unamortized bond premiums on revenue bonds			6,392,648	-	(130,242)	6,262,406	135,787
Total water fund obligations payable and long-term debt			552,160,154	9,529,928	(44,550,474)	517,139,608	13,560,087
Compensated absences			1,455,747	1,089,154	(869,376)	1,675,525	929,079
Workers' compensation and general claims			3,664,610	4,765,346	(1,541,757)	6,888,199	910,000
Total water fund long-term obligations			$557,280,511	$15,384,428	$(46,961,607)	$525,703,332	$15,399,166

Note 5 - Long-term Debt (Continued)

	Interest Rate Ranges	Principal Maturity Ranges	Balance June 30, 2017	Additions	Reductions	Balance June 30, 2018	Due within One Year
Sewage disposal fund obligations payable and long-term debt:							
Obligation payable to GLWA	4.33	$11,253,800 - 25,181,700	$367,042,828	$ -	$(20,214,528)	$346,828,300	$11,253,800
Financial recovery bonds	4-6%	$2,211,673	49,548,750	-	(5,315,290)	44,233,460	-
Total principal outstanding on obligations payable and long-term debt			416,591,578	-	(25,529,818)	391,061,760	11,253,800
Compensated absences			2,183,621	1,633,732	(1,304,065)	2,513,288	1,393,619
Workers' compensation and general claims			15,789,783	4,781,103	(6,964,286)	13,606,600	276,000
Total sewage disposal fund long-term obligations			$434,564,982	$ 6,414,835	$(33,798,169)	$407,181,648	$12,923,419

Obligation Payable to GLWA

As part of the lease transaction in which the City leased the regional water and sewer system of the DWSD to GLWA, all DWSD revenue bonds outstanding as of December 31, 2015, including those purchased by the Michigan Finance Authority under its state revolving loan program, were assumed by GLWA with the consent of bondholders.

Per the Water and Sewer Services agreement between the DWSD and GLWA dated June 12, 2015 and the master bond ordinances dated October 7, 2015, as amended, the Detroit retail class continues to pay its common-to-all share of debt service revenue requirements and its allocated share of debt service revenue requirements associated with improvements to the local water and sewer systems. Payments on the debt service incurred by GLWA on the outstanding revenue bonds assumed as of December 31, 2015 are to be allocated using an agreed-upon percentage of total debt service associated with bond financed local improvements over the life of such bonds, though the bonds themselves continue to be secured by the net revenue of GLWA, which includes all revenue payable by the Detroit retail class. During 2018, the parties reached an agreement on the debt allocation, resulting in reductions of $26,749,580 and $8,952,228 to the debt allocated to the Water Fund and Sewage Disposal Fund, respectively. The reductions to the debt allocation for the Water Fund and Sewage Disposal Fund are included in the special item discussed in Note 9 to the financial statements.

Financial Recovery Bonds

On December 10, 2014, the City issued approximately $1.3 billion of debt. The Financial Recovery Bonds, Series 2014-B(1) and Series 2014-B(2) total $616,560,047 and $15,404,098, respectively. They are federally taxable. The bonds' interest rate is 4.0 percent per annum from December 10, 2014 through and including March 31, 2034 and 6.0 percent per annum thereafter until the maturity date of April 1, 2044. The bonds were delivered to classes of creditors in satisfaction of (1) Class 12 OPEB claims (the bonds were distributed to the new Voluntary Employee Beneficiary Associations (VEBA) for the general retirees and police and fire retirees), (2) Class 9 Pension Obligation Certificate (POC) claims, and (3) other unsecured bankruptcy claims.

Note 5 - Long-term Debt (Continued)

The Financial Recovery Bonds, Series 2014-C total $88,430,021. The 2014-C Bonds were issued as part of the Syncora Settlement and FGIC/POC Settlement in the plan and on the effective date. As part of the Plan of Adjustment, GLWA remains responsible to pay a portion of the debt; however, the entire debt remains in the City's name. The Department was allocated 11.21 percent and 11.55 percent of the Series 2014-B and Series 2014-C debt, respectively, of which GLWA's portion of that allocation is 71.42 percent, and the DWSD's portion of that allocation is 28.58 percent.

In 2018, the governing body of the City of Detroit, Michigan authorized the use of general funds for the full redemption of the General Obligation Bonds, 2014 Series C, including the amount allocated to the Department. The 2014 Series C debt was fully redeemed on April 13, 2018. As discussed in Note 1 to the financial statements, the Department will repay the City of Detroit General Fund under the terms of the original amortization schedule for the General Obligation Bonds, 2014 Series C, including an interest rate of 5 percent per year, with principal and interest due on June 30 each year, and a final maturity date of June 30, 2027. The Department has recorded an advance from the City of Detroit General Fund for the entire balance of the allocated debt and has also recorded a receivable from GLWA for the debt allocated to GLWA that will be reimbursed to the Department.

Revenue Bonds

Proceeds from the revenue bonds provided financing for improvements to the local water system. The bonds are secured by the net revenue of GLWA and the DWSD. GLWA's master bond ordinance requires collections of DWSD receipts to be deposited into trust accounts controlled by the master bond ordinance (through GLWA), which will be used, among other things, to fund debt principal and interest. Principal payments on the revenue bonds will commence on July 1, 2042.

State Revolving Fund Loans

The Department (Water Fund) received loans from the State of Michigan Revolving Loan Fund totaling $9,529,928 during the year ended June 30, 2018. The proceeds of the loans were used to pay the costs of making certain repairs and improvements to the water system and are reported as a long-term liability on the statement of net position. The Department (Water Fund) also recorded nonoperating revenue in the amount of $2,534,779 related to principal forgiveness on state revolving loans.

Debt Service Requirements to Maturity

Annual debt service requirements to maturity for the above obligations and debt, excluding premiums on revenue bonds, are as follows:

Years Ending June 30	Water Fund			Sewage Disposal Fund		
	Principal	Interest	Total	Principal	Interest	Total
2019	$ 13,424,300	$ 23,976,449	$ 37,400,749	$ 11,253,800	$ 16,787,038	$ 28,040,838
2020	14,055,400	23,342,664	37,398,064	11,741,100	16,299,738	28,040,838
2021	14,721,400	22,678,901	37,400,301	12,249,500	15,791,338	28,040,838
2022	15,418,700	21,983,636	37,402,336	12,779,900	15,260,938	28,040,838
2023	16,143,800	21,255,369	37,399,169	13,333,300	14,707,538	28,040,838
2024-2028	98,228,716	93,767,637	191,996,353	84,689,592	63,830,490	148,520,082
2029-2033	123,690,120	68,351,093	192,041,213	104,806,065	43,802,484	148,608,549
2034-2038	154,129,920	37,487,761	191,617,681	126,938,465	20,962,949	147,901,414
2039-2043	17,803,720	13,872,914	31,676,634	11,058,365	2,654,007	13,712,372
2044-2048	43,261,126	3,926,084	47,187,210	2,211,673	132,700	2,344,373
Total	$ 510,877,202	$ 330,642,508	$ 841,519,710	$ 391,061,760	$ 210,229,220	$ 601,290,980

Note 6 - Contingent Liabilities

The Department is subject to various governmental environmental laws and regulations. GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, established accounting and financial reporting standards for pollution (including contamination) remediation obligations, which are obligations to address the current or potential detrimental effects of existing pollution by participating in pollution remediation activities, such as site assessments and cleanups. The standard excludes pollution prevention or control obligations with respect to current operations and future pollution remediation activities that are required upon retirement of an asset, such as landfill closure and postclosure care. The Department determined that there were no estimated pollution remediation obligations to be recorded at June 30, 2018.

The Department is also a defendant in numerous alleged claims, lawsuits, billing disputes, and other stated and pending demands. The Department's and the City's legal department have estimated a reserve, which is included in the accompanying basic financial statements, for the potential outcome of such claims or the amount of potential damages in the event of an unfavorable outcome for each of the above contingencies. The Department's management and the City's legal department believe that any differences in reserved amounts and final settlement, after consideration of claims covered by insurance, resulting from such litigation will not materially impact the Department's financial position or results of operations.

The City holds various commercial insurance policies to cover other potential loss exposures.

Note 7 - Risk Management

The Department is exposed to various risks of loss related to property loss, torts, errors and omissions, and employee injuries (workers' compensation), as well as medical benefits provided to employees. The Department is self-insured for losses, such as workers' compensation, legal, disability benefits, and vehicular liabilities. There is also a risk of loss associated with providing health, dental, and life insurance benefits to employees and retirees.

The Department, through the City, provides health and dental insurance benefits to employees and certain retirees through self-insured health plans that are administered by third-party administrators. The Department does not purchase excess or stop-loss insurance for its self-insured health plans.

The Department purchases public official liability insurance and assumes a $250,000 self-insured retention for any one loss or occurrence under its self-insured public official liability program. The Department is fully self-insured for property liabilities, general liabilities for accidents that occur on department properties, and environmental-related liabilities and does not purchase excess insurance for these liabilities. Settled claims relating to the commercial insurance have not exceeded the amount of insurance coverage in any of the past three fiscal years.

The Department estimates the liability for claims that have been incurred through the end of the fiscal year, including claims that have been reported and those that have not yet been reported. Changes in the estimated liability for the past two fiscal years were as follows:

	Water Fund		Sewage Disposal Fund	
	2018	2017	2018	2017
Estimated liability - Beginning of year	$ 3,664,610	$ 489,624	$ 15,789,783	$ 1,043,797
Estimated claims incurred, including changes in estimates	4,765,346	4,290,170	(2,019,444)	14,927,576
Claim payments	(1,541,757)	(1,115,184)	(163,739)	(181,590)
Estimated liability - End of year	$ 6,888,199	$ 3,664,610	$ 13,606,600	$ 15,789,783

Note 8 - Pension Plans

Plan Description

The Department participates in the City of Detroit General Retirement System (the "System"). The System is a single-employer plan composed of a defined benefit plan component and a defined contribution annuity plan component. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. The plan is administered by its own board of trustees. Plan members include active employees, retirees, and beneficiaries from various departments within the City. Benefit terms have been established by contractual agreements between the City and the employees' collective bargaining units; amendments are subject to the same process.

The System issues publicly available financial reports that include financial statements and the required supplemental information. The reports can be obtained from City of Detroit Retirement Systems, One Detroit Center, 500 Woodward Ave., Suite 3000, Detroit, MI 48226, or obtained from the System's website (www.rscd.org). Detailed information about the pension plan's fiduciary net position is available in the separately issued financial report. The pension plan's fiduciary net position has been determined on the same basis of accounting used by the pension plan. The Plan uses the economic resources measurement focus and the full accrual basis of accounting. Investments are stated at fair value or estimated fair value. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to the plan are recognized when due pursuant to legal requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The City filed for bankruptcy in June 2013 and subsequently exited bankruptcy on December 10, 2014. This resulted in the adoption of the Eighth Amended Plan for Adjustment of Debts of the City of Detroit (the "POA"). Under the provisions of the POA, effective July 1, 2014, the Combined Plan for General Employees Retirement System of the City of Detroit (the "Combined Plan") was introduced.

As a result of negotiations between the City and the public employee unions, the existing plan benefit formulas were frozen and no employees were allowed to earn further benefits under the existing plans after June 30, 2014. The emergency manager issued Order #30 (General Employees Retirement System of the City of Detroit) on June 30, 2014, which put these changes into effect. This plan in existence as of June 30, 2014 is known as the "legacy plan" or "Component II."

As of July 1, 2014, all eligible employees began participating in the new hybrid pension plan, or Component I. Eligible city employees will receive the benefits they have earned under the legacy Component II plan for services performed through June 30, 2014, plus an additional benefit under the new hybrid plan formula for services after June 30, 2014.

With respect to Component II benefit adjustments resulting from the POA, the pension settlement (for which benefit levels were and are contingent on other factors, including receipt of outside contributions) provided for: a loss of cost of living adjustments, or "escalators" (COLAs), paid after July 1, 2014; a 4.5 percent reduction to the remaining accrued pension benefit after the COLA loss; and plan members who participated in the Annuity Savings Fund (ASF) plan between 2003 and 2013, subject to certain caps, recoupment of certain amounts of interest deemed by the City to be in "excess" of that which should have been credited to the individual ASF accounts, referred to as "ASF Recoupment." ASF Recoupment, like other provisions of the pension settlement, was not optional. Most members will pay their ASF Recoupment by a monthly deduction from their future pension benefits for a set term of months, including interest calculated at 6.75 percent. All members were offered a lump-sum cash option, which was limited in the aggregate to $30 million in member recoupment. The POA also included the possibility of restoration of certain benefit reductions, based on a program for the most financially vulnerable pensioners and beneficiaries through the State of Michigan Treasury Department, as well as a new feature of Component II allowing restoration of benefits depending on the plan funding level over time.

Note 8 - Pension Plans (Continued)

Nonemployer contributing entity within Component II - On September 9, 2014, a memorandum of understanding (MOU) was entered into by the emergency manager and mayor of the City of Detroit, Michigan, a county executive of each of the charter counties of Wayne and Macomb, Michigan, the County of Oakland, Michigan, and the governor of the State of Michigan. The purpose of the MOU was to establish a framework for the creation of a regional authority (known as Great Lakes Water Authority or GLWA) pursuant to Act 233 of 1955 to operate, control, and improve the regional assets of the water supply system and the sewage disposal system owned by the City.

Pursuant to the MOU, the City of Detroit, Michigan and GLWA entered into two lease agreements: the Regional Water Supply System Lease dated June 12, 2015 and the Regional Sewage Supply System Lease dated June 12, 2015. Under the provisions of the lease agreements, GLWA leases the regional assets of the City for a period of at least 40 years.

Pursuant to the lease agreements, on December 1, 2015, a tri-party agreement between the City of Detroit, Michigan, General Retirement System of the City of Detroit (GRS), and GLWA was signed. Per the POA and Section 4.3 of the lease agreements, GLWA is required to pay a portion of the pension obligation that will be allocable to the City of Detroit Water and Sewerage Department. The purpose of the pension reporting agreement is to set forth in determining the funding status for the DWSD pension pool, and for GRS to agree to provide GLWA with certain actuarial and other reports to enable GLWA to properly manage and pay its portion of the pension obligation that is allocable to the DWSD.

Effective January 1, 2016, GLWA was established. Accordingly, the prior DWSD division was split into two: one representing the ongoing DWSD department, now referenced as DWSD Retail (DWSD-R), and another to represent the Great Lakes Water Authority. In accordance with the pension reporting agreement, the net position and liabilities of the DWSD were allocated to DWSD-R and GLWA in accordance with written directions received from DWSD-R and GLWA. Per written directions, GLWA is to be allocated 70.3 percent of the net position and liabilities of the DWSD. Because GLWA has no employees or retirees in the Combined Plan, GLWA is considered a nonemployer contributing entity in accordance with GASB Statement No. 67. As this arrangement also meets the definition of a special funding situation per GASB Statement No. 68, GLWA's allocated pension expense of $25,100,439 is recognized by the Department as revenue and an expense.

Benefits Provided

Component II - Component II is the legacy plan, the original defined benefit plan, which includes a defined benefit component and a defined contribution component. Component II generally applies to benefits accrued by members prior to July 1, 2014. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. Except as specifically provided in the Combined Plan, benefits provided under Component II are frozen effective June 30, 2014. Component II also includes the Income Stabilization Fund. The fund, a part of Component II and established as a provision of the POA, was established for the sole purpose of paying the Income Stabilization Benefits and Income Stabilization Benefits Plus to eligible pensioners.

The Income Stabilization Fund is outlined in Section G-3 of the POA. The annual supplemental pension income stabilization benefit is equal to the lesser of either (i) the amount needed to restore an eligible retiree's reduced annual pension benefit to 100 percent of the amount of the annual pension benefit that the eligible retiree was receiving from the System in 2013 or (ii) the amount needed to bring the total annual 2013 household income of the eligible retiree up to 130 percent of the federal poverty level for 2013. The Income Stabilization Fund did not have an impact on total pension liability for the systems or the City as of the measurement date of June 30, 2017 because the assets held by the Income Stabilization Fund are not considered to be available to fund the normal retirement benefit provisions under the pension plan, but instead are restricted to pay Income Stabilization Benefits and Income Stabilization Benefits Plus. No liability currently exists for these benefits.

Note 8 - Pension Plans (Continued)

Postbankruptcy GRS Component II plan members, upon retirement, will receive an annuity that shall be the actuarial equivalent of the member's accumulated contributions in the 1973 Defined Contribution Annuity Savings Fund at the time of retirement. In addition, each member will receive a basic service and a membership service pension. The basic service pension will consist of $12.00 per annum multiplied by the number of years and fractions of years of credited service, not to exceed 10 years. The membership service pension will be calculated as follows:

- For members who retire on or before June 30, 1992, a membership service pension of 1.5 percent of average final compensation for the first 10 years of service and 1.63 percent for service in excess of 10 years
- For members who retire on or after July 1, 1992 but prior to July 1, 1998, a membership service pension of 1.5 percent of average final compensation for each year of service for the first 10 years, plus 1.7 percent of average final compensation for each year of service in excess of 10 years up to 20 years of service, plus 1.9 percent of average final compensation for each year of service in excess of 20 years. In no event shall benefits paid by the System exceed 90 percent of average final compensation.
- For members who retire on or after July 1, 1998, a membership service pension for service rendered prior to July 1, 2012 of 1.6 percent of average final compensation for each year of service for the first 10 years, plus 1.8 percent of average final compensation for each year of service in excess of 10 years, up to 20 years of service, plus 2 percent of average final compensation for each year of service in excess of 20 years up to 25 years, plus 2.2 percent of average final compensation for each year of service in excess of 25 years; plus, for service rendered after July 1 2012 and prior to July 1, 2014, 1.5 percent of average final compensation for each year of service; plus $12 for each year of city service not to exceed $120. Notwithstanding the foregoing, for members of the Michigan Council 25 of the American Federation of State, County and Municipal Employees, AFL-CIO Local 2920 and the Detroit Senior Water Systems Chemists Association bargaining units, the effective date of the 1.5 percent multiplier was April 1, 2013 for all years of service rendered after that date. In no case shall benefits paid by the System exceed 90 percent of average final compensation.

In the event the eligible retiree's estimated adjusted annual household income in any calendar year after the first year that the eligible retiree receives a benefit from the Income Stabilization Fund is less than 105 percent of the federal poverty level in that year, the eligible retiree will receive an additional Income Stabilization Benefit Plus benefit commencing as of the following July 1.

Component I - Component I is considered a "hybrid" plan because it includes a defined benefit component and a defined contribution component. Component I of the plan document applies to benefits accrued by members of the GRS on and after July 1, 2014. The Component I plan provides retirement, disability, and survivor benefits to plan members and beneficiaries.

Contributions

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year. Accordingly, in the past, the System retained an independent actuary to determine the annual contribution. Until 2024, contributions are based on specific provisions of the Plan of Adjustment. After 2024, contributions will be actuarially determined based on a 30-year level principal closed amortization.

Note 8 - Pension Plans (Continued)

Employer Contributions

Component II

The Department made contributions of $12,741,300 to the System for the fiscal year ended June 30, 2018.

Component I

Per Section 9.3 of the Combined Plan, commencing on July 1, 2015 and ending on June 30, 2023, the Department is required to contribute 5 percent of compensation of active members. During the fiscal year ended June 30, 2018, the Department contributed $1,328,993 to the Component I plan.

Employee Contributions

Contribution requirements of plan members are established and may be amended by the board of trustees in accordance with the City Charter, union contracts, and plan provisions. For the year ended June 30, 2018, there were no employee contributions into Component II, as the plan was frozen as of June 30, 2014. Effectively, employee contributions were allowed only until August 1, 2014. Contributions into Component I began with the members' first payroll date occurring in August 2014. With respect to GRS Component I, the Department's employees who are members of GRS are now required to make mandatory contributions of 4 percent of pay toward their defined benefit. Additionally, employees can make voluntary contributions of 3, 5, or 7 percent of annual pay. During the fiscal year ended June 30, 2018, the Department's employees contributed $1,681,415 in mandatory and voluntary contributions.

Net Pension Liability

As permitted by GASB Statement No. 68, the Department has chosen to use June 30, 2017 as its measurement date for the net pension liability (NPL). The net pension liability was calculated using the total pension liability and the System's fiduciary net position as of June 30, 2017. The June 30, 2017 total pension liability was determined by an actuarial valuation performed as of June 30, 2016, which used updated procedures to roll forward the estimated liability to June 30, 2017. At June 30, 2018, the Department reported a liability for its net pension liability as follows:

	Component II	Component I
Measurement date used for the Department's NPL	June 30, 2017	June 30, 2017
Based on a comprehensive actuarial valuation as of	June 30, 2016	June 30, 2016

	Net Pension Liability
Component II	$ 75,606,951
Component I	3,959,942
Total	$ 79,566,893

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2018, the Department recognized a pension expense of $35,704,749 for Component II and $3,732,700 for Component I.

Note 8 - Pension Plans (Continued)

At June 30, 2018, the Department reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Water Fund		Sewage Disposal Fund	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ -	$ (1,468,778)	$ -	$ (2,087,584)
Changes in assumptions	343,591	(94,525)	488,350	(134,352)
Net difference between projected and actual earnings on pension plan investments	274,076	-	-	(17,784)
Employer contributions to the plan subsequent to the measurement date	8,185,074	-	5,885,219	-
Total	$ 8,802,741	$ (1,563,303)	$ 6,373,569	$ (2,239,720)

From the above table, the Plans reported $14,070,293 for both Components II and I as deferred outflows of resources resulting from employer contributions subsequent to the measurement date, which will be recognized as a reduction of the net pension liability in the year ending June 30, 2019.

The deferred outflows of resources and deferred inflows of resources related to the change in actuarial assumptions, the net differences between projected and actual earnings on pension plan investments, and the differences between expected and actual experiences will be amortized and recognized as an addition to or a reduction of pension expense as follows:

Years Ending June 30	Water Fund	Sewage Disposal Fund
2019	$ (1,332,616)	$ (1,166,872)
2020	986,249	383,381
2021	477,902	34,363
2022	(960,555)	(836,493)
2023	(74,715)	(106,192)
Thereafter	(41,901)	(59,557)
Total	$ (945,636)	$ (1,751,370)

Actuarial Assumptions

The total pension liability in each actuarial valuation was determined using the following actuarial assumptions applied to all periods included in the measurement:

	Component II	Component I
Inflation	N/A	N/A
Salary increases	N/A	2-3%
Investment rate of return (net of investment expenses)	6.91%	6.91%

Based on an experience study from 2008-2013 issued in February 2015, the mortality table assumption was based on the RP-2014 Blue Collar Annuitant Table for males and females. The tables are projected to be fully generational, based on the two-dimensional sex distinct mortality scale MP-2014.

The actuarial assumptions other than mortality and the investment rate of return, used in the June 30, 2016 valuation to calculate the total pension liability as of June 30, 2017, were based on the results of an actuarial experience study for the period from 2002 to 2007.

Note 8 - Pension Plans (Continued)

Discount Rate

The discount rate used to measure the total pension liability as of June 30, 2017 was 6.91 percent for both Components I and II; however, the single discount rate used at the beginning of the year was 7.23 percent for both plans. For the Component II plan, the projection of cash flows used to determine the discount rates assumed that employee contributions will cease as of June 30, 2014 and that city contributions, including contributions sourced from the proceeds of the sale of artwork from the State of Michigan and the Foundation for Detroit's Future, will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and a 30-year closed level dollar amortization thereafter. For the Component I plan, the projection of cash flows used to determine the discount rates assumed that employee contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the employee rate. Based on those assumptions, the pension plans' fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Investment Rate of Return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return as of June 30, 2017 for each major asset class, including pension plan target asset allocation, as disclosed in the investment footnote, are summarized in the following table:

Component I and Component II

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Global equity	43.00 %	5.30 %
Global fixed income	16.00	3.10
Real estate	10.00	3.50
Private equity	8.00	7.20
Hedge funds	5.00	4.20
Global asset allocation/risk parity/real assets	17.00	4.10
Cash	1.00	0.30

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Department, calculated using the discount rate of 6.91 percent, as well as what the Department's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate:

	1 Percent Decrease (5.91%)	Current Discount Rate (6.91%)	1 Percent Increase (7.91%)
Net pension liability - Water Fund	$ 60,605,964	$ 46,948,714	$ 35,299,014
Net pension liability - Sewage Disposal Fund	42,128,536	32,618,179	24,537,119
Total	$ 102,734,500	$ 79,566,893	$ 59,836,133

Note 9 - Special Item - Bifurcation

On January 1, 2016, the City of Detroit, Michigan effectuated a lease agreement with the Great Lakes Water Authority for the regional water system for a term of 40 years, to be extended automatically to coincide with the final maturity of any bonds issued to finance improvements to the regional or local water systems. The service agreement and a corresponding lease of the regional water and sewer system collectively provide for an annual lease payment of $50 million (of which $22,500,000 is allocated to the Water Fund and $27,500,000 is allocated to the Sewage Disposal Fund) in exchange for a leasehold interest in the Water and Sewer System's water treatment plants, wastewater treatment plant, certain public sewers, wastewater interceptors, transmission lines, and certain other assets, including cash and investments held by the Department as of December 31, 2015, assignment of all revenue of the regional and local water systems, and the assumption of all the DWSD bonded debt and certain liabilities.

The Department has continued to negotiate some of the final issues concerning the bifurcation, and a final agreement was executed during 2018. Certain estimates from prior years were adjusted as a result of the final agreement, including pre-effective date liabilities and related cash balances and the portion of the debt assumed by GLWA that was utilized for local system improvements, whose debt will continue to be funded by the Department. As a result of the negotiations, the Department has recognized gains (losses) from the bifurcation in the current year and prior two years as follows:

	Water Fund	Sewage Disposal Fund	Total
June 30, 2016	$ 776,532,736	$ 808,913,176	$ 1,585,445,912
June 30, 2017	(85,895,242)	(72,059,278)	(157,954,520)
June 30, 2018	35,482,690	66,377,234	101,859,924
Cumulative total gain on bifurcation	$ 726,120,184	$ 803,231,132	$ 1,529,351,316

Required Supplemental Information

Required Supplemental Information
Schedule of Changes in the Net Pension Liability and Related Ratios - Component II

Last Four Fiscal Years (Based on Measurement Date)

	2017	2016*	2015	2014
Total Pension Liability				
Service cost	$ -	$ -	$ -	$ 9,746,003
Interest	15,981,838	17,060,232	73,105,847	66,690,581
Changes in benefit terms	-	-	(216,739,841)	(27,617,959)
Differences between expected and actual experience	1,000,921	(2,139,381)	(607,587)	-
Changes in assumptions	6,401,809	7,447,135	(28,150,723)	(74,737,651)
Benefit payments, including refunds	(21,580,612)	(29,420,988)	(77,231,357)	(98,853,724)
Net Change in Total Pension Liability	1,803,956	(7,053,002)	(249,623,661)	(124,772,750)
Total Pension Liability - Beginning of year	231,839,248	238,892,250	1,053,974,670	1,178,747,420
Total Pension Liability - End of year	**$ 233,643,204**	**$ 231,839,248**	**$ 804,351,009**	**$ 1,053,974,670**
Plan Fiduciary Net Position				
Contributions - Employer	$ 12,741,300	$ 12,741,300	$ 42,888,889	$ 21,491,022
Contributions - Member	-	-	186,274	3,335,706
Net investment income (loss)	16,397,207	(917,059)	24,580,775	102,177,233
Administrative expenses	-	-	(30,290)	(3,416,015)
Benefit payments, including refunds	(21,580,612)	(29,420,988)	(77,231,357)	(98,853,724)
Other	631,198	469,357	39,485,858	-
Net Change in Plan Fiduciary Net Position	8,189,093	(17,127,390)	29,880,149	24,734,222
Plan Fiduciary Net Position - Beginning of year	149,847,160	166,974,550	532,323,722	507,589,500
Plan Fiduciary Net Position - End of year	**$ 158,036,253**	**$ 149,847,160**	**$ 562,203,871**	**$ 532,323,722**
Department's Net Pension Liability - Ending	**$ 75,606,951**	**$ 81,992,088**	**$ 242,147,138**	**$ 521,650,948**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	67.64 %	64.63 %	69.90 %	50.51 %
Covered Payroll	$ 22,864,010	$ 57,607,917	$ 60,782,192	$ 64,835,429
Department's Net Pension Liability as a Percentage of Covered Payroll	330.68 %	142.33 %	398.39 %	804.58 %

* As described in Note 8, the Great Lakes Water Authority (GLWA) was established on January 1, 2016. On this date, GLWA assumed a portion of the net position and liabilities of the Department. The 2016 amounts have been adjusted to reflect only the portion allocated to the Department.

GASB Statement No. 67 was implemented for FY 2014 and does not require retroactive implementation. Data will be added as information is available until 10 years of such information is available.

Required Supplemental Information
Schedule of Changes in the Net Pension Liability and Related Ratios - Component I

Last Three Fiscal Years (Based on Measurement Date)

	2017	2016	2015
Total Pension Liability			
Service cost	$ 4,535,838	$ 5,556,742	$ 5,853,312
Interest	986,953	704,400	210,719
Differences between expected and actual experience	(3,118,495)	(1,577,654)	-
Changes in assumptions	583,770	521,263	(352,686)
Benefit payments, including refunds	(375,730)	(1,827,192)	-
Voluntary member contributions	585,787	1,085,989	1,662,483
Net Change in Total Pension Liability	3,198,123	4,463,548	7,373,828
Total Pension Liability - Beginning of year	11,837,376	7,373,828	-
Total Pension Liability - End of year	**$ 15,035,499**	**$ 11,837,376**	**$ 7,373,828**
Plan Fiduciary Net Position			
Contributions - Employer	$ 1,012,219	$ 1,884,087	$ 2,596,022
Contributions - Member	838,418	1,529,722	2,103,576
Net investment income (loss)	1,903,831	(33,400)	6,011
Administrative expenses	(375,730)	(912,491)	(436,927)
Benefit payments, including refunds	(557,335)	(1,827,192)	-
Voluntary member contributions	585,787	1,085,989	1,662,483
Other	13,057	(2,570)	-
Net Change in Plan Fiduciary Net Position	3,420,247	1,724,145	5,931,165
Plan Fiduciary Net Position - Beginning of year	7,655,310	5,931,165	-
Plan Fiduciary Net Position - End of year	**$ 11,075,557**	**$ 7,655,310**	**$ 5,931,165**
Department's Net Pension Liability - Ending	**$ 3,959,942**	**$ 4,182,066**	**$ 1,442,663**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.66 %	64.67 %	80.44 %
Covered Payroll	$ 22,864,010	$ 57,607,917	$ 60,782,192
Department's Net Pension Liability as a Percentage of Covered Payroll	17.32 %	7.26 %	2.37 %

GASB Statement No. 67 was implemented for FY 2014 and does not require retroactive implementation. Data will be added as information is available until 10 years of such information is available.

Required Supplemental Information
Schedule of Pension Contributions
Component II

Last Ten Fiscal Years

Years Ended June 30

	2018*	2017*	2016*	2015	2014	2013	2012	2011	2010	2009
Actuarially required contribution	$ 12,741,300	$ 12,741,300	$ 42,888,889	$ 21,491,022	$ 24,868,234	$ 24,865,090	$ 13,026,588	$ 21,791,527	$ 9,386,138	$ 8,434,151
Contributions in relation to the actuarially required contribution	12,741,300	12,741,300	42,888,889	21,491,022	27,301,090	26,450,595	10,861,181	19,715,512	11,400,588	11,587,039
Contribution (Excess) Deficiency	**$ -**	**$ -**	**$ -**	**$ -**	**$ (2,432,856)**	**$ (1,585,505)**	**$ 2,165,407**	**$ 2,076,015**	**$ (2,014,450)**	**$ (3,152,888)**
Department's Covered Payroll	$ 22,864,010	$ 41,216,957	$ 57,607,917	$ 60,782,192	$ 64,835,429	$ 64,836,192	$ 78,425,725	$ 80,880,585	$ 88,124,257	$ 88,882,438
Contributions as a Percentage of Covered Payroll	55.73 %	30.91 %	74.45 %	35.36 %	42.11 %	40.80 %	13.85 %	24.38 %	12.94 %	13.04 %

* Contributions beginning with fiscal year 2015 were determined by the provisions of the Plan of Adjustment and were not actuarially determined.

Required Supplemental Information
Schedule of Pension Contributions - Component I

Last Four Fiscal Years

Years Ended June 30

	2018	2017	2016	2015
Contractually determined contribution	$ 1,328,993	$ 1,012,219	$ 1,884,087	$ 2,596,022
Contributions in relation to the contractually determined contribution	1,328,993	1,012,219	1,884,087	2,596,022
Contribution Deficiency	$ -	$ -	$ -	$ -
Covered Payroll	$ 22,864,010	$ 41,216,957	$ 57,607,917	$ 60,782,192
Contributions as a Percentage of Covered Payroll	5.81 %	2.46 %	3.27 %	4.27 %

Contributions are made in accordance with the Plan of Adjustment, which is 5 percent of compensation of active members.

Pension Information

Benefit Changes

Component II

In 2014, the pension plan was frozen. No new employees are allowed to participate in the plan. All benefits for actives were frozen as of June 30, 2014 based on service and average final compensation accrued as of that date.

In 2015, benefits were reduced by 4.5 percent, and the cost of living adjustments were eliminated.

Changes in Assumptions

Component II

In 2014, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 5.88 percent to 7.2 percent, updating the mortality tables from RP-2000 Combined Table to RP-2014 Blue Collar Mortality Table, and adjustments for longevity and unused sick leave were eliminated.

Component II and I

In 2015, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 7.2 percent to 7.61 percent.

In 2016, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 7.61 percent to 7.23 percent.

In 2017, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 7.23 percent to 6.91 percent.

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Memorandum

To:	Board of Water Commissioners Finance Committee, City of Detroit Water and Sewerage Department
From:	Beth Bialy and Tim St. Andrew
Subject	Summary of audit observations and comments
Date	December 14, 2018
CC:	Gary Brown and Thomas Naughton

We have recently completed our audit of the City of Detroit, Michigan (the "City"), which included the Water Fund and Sewage Disposal Fund as enterprise funds of the City. As part of that audit, we have communicated relevant matters to those charged with governance of the City. With the issuance of the separate Water Fund and Sewage Disposal Fund financial statements, we felt it appropriate to summarize the information contained in those communications that are relevant to the City of Detroit Water and Sewerage Department (the "DSWD" or the "Department").

Below is a summarized discussion of the observations and comments that are contained in our formal communications to the City of Detroit, Michigan (note that the finding numbers refer to the more comprehensive discussion to be found in the City's report on internal control and compliance). For a more complete understanding, we would refer you to those original documents. However, the two of us are available to discuss these concepts with the Board of Water Commissioners at its convenience.

It is important to understand that, due to the financial environment in place, the DWSD is reliant on certain accounting procedures and controls of the City and the Great Lakes Water Authority (GLWA). We include all such matters here because we feel that, in your oversight role, it is important to focus on all internal control issues that impact the DWSD.

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Internal Control Matters

Finding No.	2018-001
Finding Type	Material weakness (repeat finding)
Finding	The Detroit Water and Sewerage Department (the "DWSD") should have a process in place to ensure proper recording and reconciling of general ledger activity throughout the year, as well as identification and recording of all year-end closing entries in accordance with generally accepted accounting principles (GAAP) prior to the commencement of the audit. The DWSD general ledger and underlying financial records were not completely reconciled and closed in a timely manner. As a result, there were audit adjustments identified during the audit of the DWSD. If the DWSD had not recorded the auditor-identified entries, the financial statements would have been materially misstated.

Finding No.	2018-002
Finding Type	Significant deficiency
Finding	There should be a process in place to ensure that customer accounts are updated and billed at the appropriate rates for water and sewage consumption. The DWSD's process to ensure that all customer accounts are updated and billed at the appropriate rates for water and sewage consumption did not properly update all customer accounts to the appropriate water and sewage billing rate when the rates were changed during the year. Without proper updates to customer accounts within the water and sewage billing systems, there is the potential for the DWSD to under- or over-bill customers throughout the year.

Audit Observations

Qualitative Aspects of Accounting Practices

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected.

Estimate	Basis for Estimate
Accrued claims and judgments	The estimated probable loss that will result from ongoing litigation involving general and automobile claims
Accrued workers' compensation	An actuarial report prepared by an independent third party. The report was based on certain assumptions pertaining to actual loss development patterns that are augmented with industry benchmark loss development patterns.
Allowance for doubtful accounts	Management's analysis of accounts receivable for water and sewer billings that are unlikely to be collected by the DWSD
Net pension liability, deferred inflows and outflows, and pension expense	Independent third-party actuary services. These valuations are based on certain assumptions pertaining to mortality, expected returns on plan assets, and future contributions from the City or the DWSD.

We evaluated the key factors and assumptions used to develop the estimates above in determining that they are reasonable in relation to the financial statements taken as a whole.

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements were the long-term obligation disclosures included in Note 5, the risk management disclosures in Note 7, and the pension disclosures in Note 8.

Significant Matters

The Department has continued to negotiate some of the final issues concerning the bifurcation, and a final agreement was executed during 2018. Certain estimates from prior years were adjusted as a result of the final agreement, including pre-effective date liabilities and related cash balances and the portion of the debt assumed by GLWA that was utilized for local system improvements, whose debt will continue to be funded by the Department. As a result of the negotiations, the Department has adjusted the recognition of the gain from the bifurcation in the current year by $35,482,690 in the Water Fund and $66,377,234 in the Sewage Disposal Fund.

We would like to take this opportunity to thank the DWSD's staff for the cooperation and courtesy extended to us during our audit. Their assistance and professionalism are invaluable. We welcome any questions you may have regarding the following communications, and we would be willing to discuss any of these or other questions that you might have at your convenience.

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